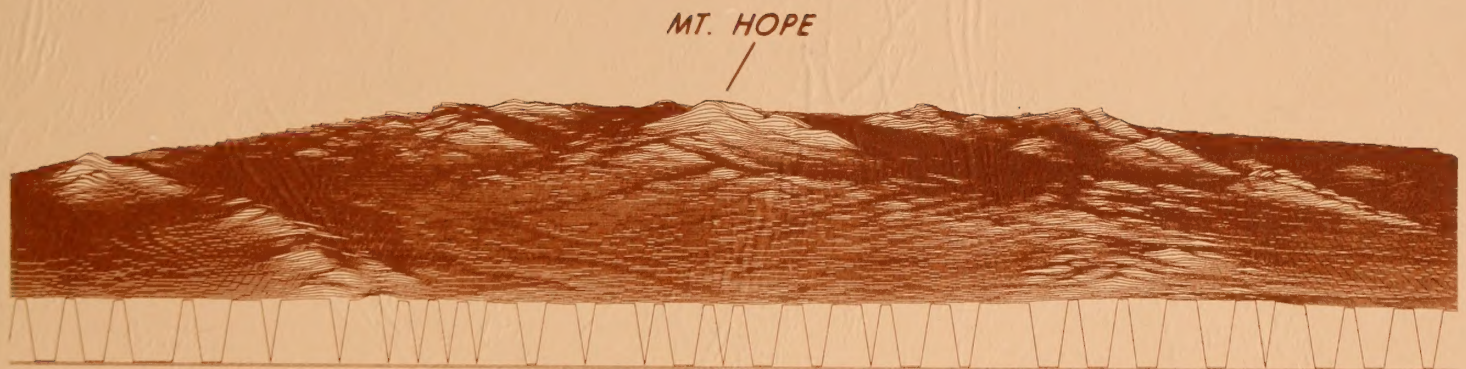




88009582

SOCIOECONOMICS  
TECHNICAL REPORT NO.9  
MT. HOPE MOLYBDENUM PROJECT



View from the south looking north

U.S. DEPARTMENT OF INTERIOR  
BUREAU OF LAND MANAGEMENT  
BATTLE MOUNTAIN, NEVADA

DECEMBER 1984



# 119506A2

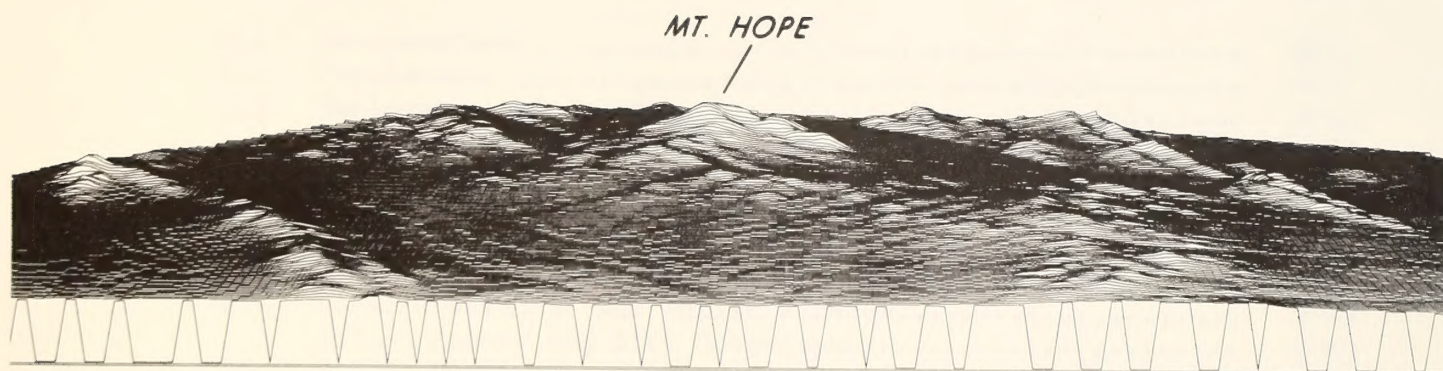
88009582

TD  
195  
.M5  
M686  
no.9

**SOCIOECONOMICS**

**TECHNICAL REPORT NO.9**

**MT. HOPE MOLYBDENUM PROJECT**



View from the south looking north

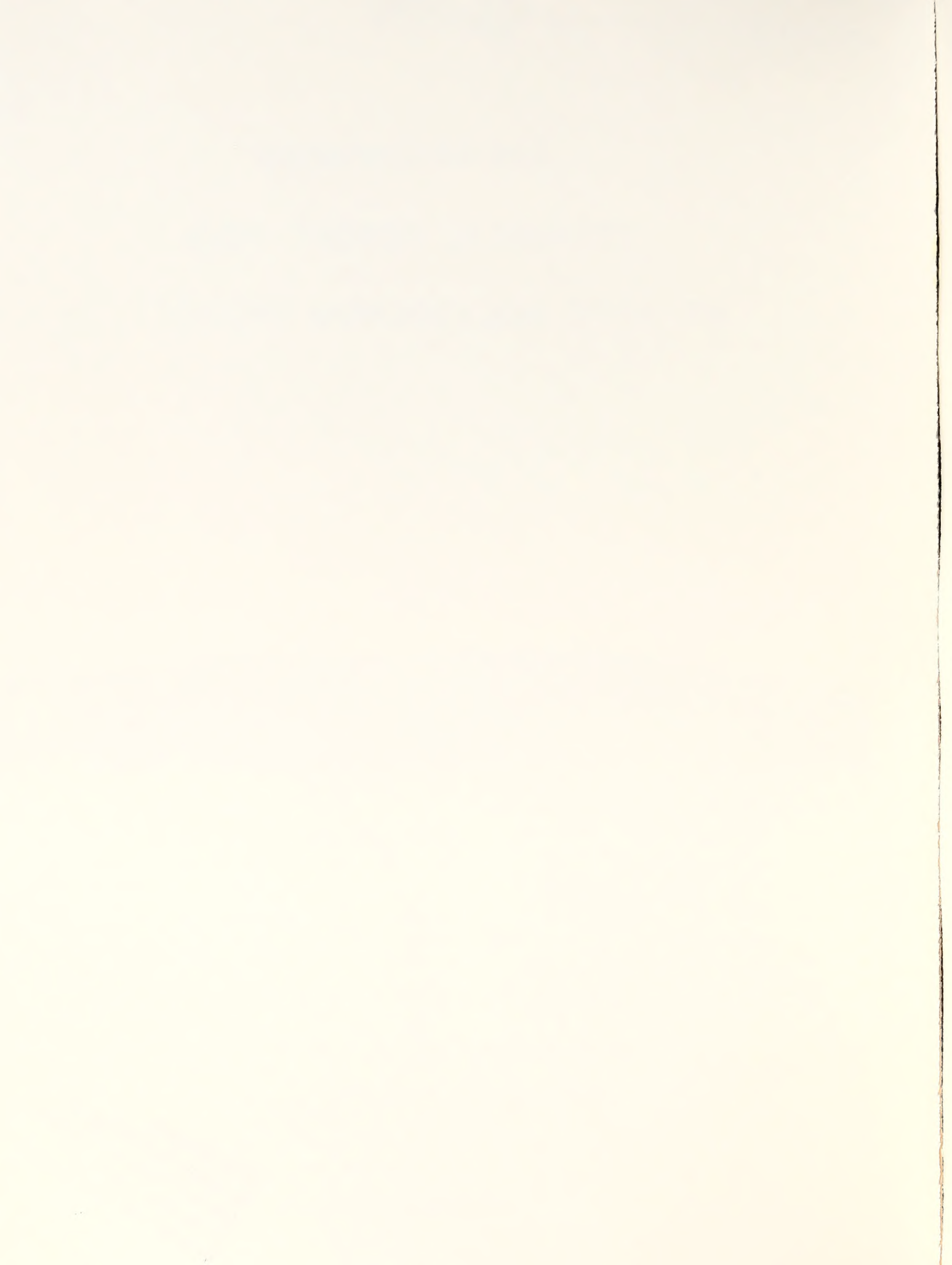
**U.S. DEPARTMENT OF INTERIOR**

**BUREAU OF LAND MANAGEMENT**

**BATTLE MOUNTAIN, NEVADA**

DECEMBER 1984

BLM Library  
D-553A, Building 50  
Denver Federal Center  
P. O. Box 25047  
Denver, CO 80225-0047

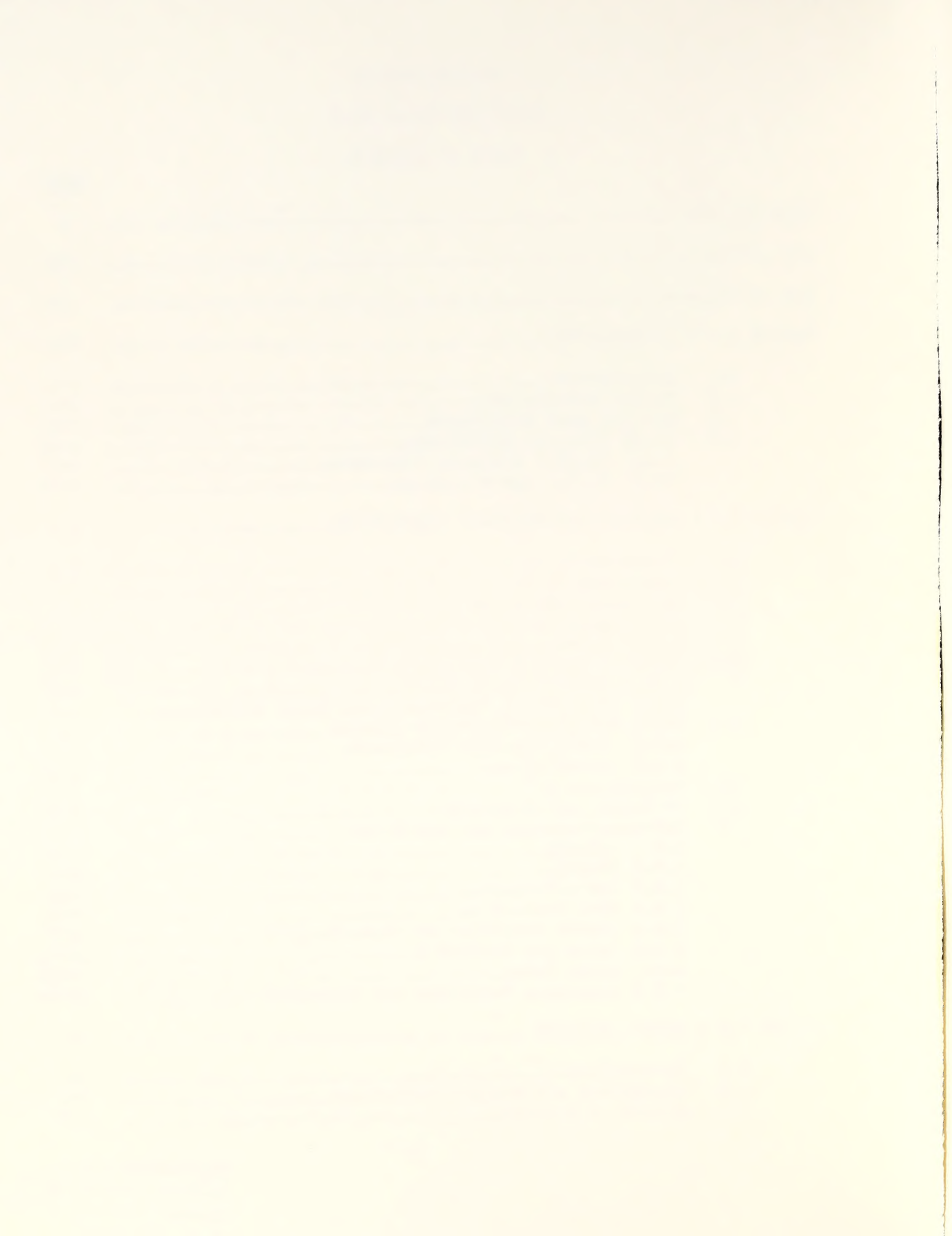


# SOCIOECONOMICS

## TECHNICAL REPORT NO.9

### TABLE OF CONTENTS

	<u>PAGE</u>
Table of Contents.....	i
List of Tables.....	iii
List of Figures.....	iv
CHAPTER 1.0 - INTRODUCTION.....	1-1
1.1 Introduction.....	1-1
1.2 Project Description.....	1-1
1.3 Baseline Data Development.....	1-2
1.4 Impact Analyses Methodology.....	1-12
1.4.1 Project Sensitive Components.....	1-13
1.4.2 Fiscal Impact Analyses.....	1-14
CHAPTER 2.0 - BASELINE SOCIOECONOMIC DESCRIPTION.....	2-1
2.1 Introduction.....	2-1
2.2 Population.....	2-1
2.3 Employment and Income.....	2-11
2.3.1 Employment.....	2-11
2.3.2 Income.....	2-28
2.4 Selected Regional Economic Activities.....	2-35
2.4.1 Mining/Mineral Exploration.....	2-35
2.4.2 Agriculture, Government and Other Sectors.....	2-41
2.5 Local Government and Public Finance.....	2-43
2.5.1 County and City Government.....	2-43
2.5.2 Public Finance.....	2-51
2.6 Housing.....	2-70
2.7 Attitudes and Lifestyles.....	2-77
2.8 Community Services and Facilities.....	2-84
2.8.1 Schools.....	2-84
2.8.2 Health.....	2-87
2.8.3 Law Enforcement.....	2-92
2.8.4 Fire Protection.....	2-95
2.8.5 Public Utilities and Communications.....	2-97
2.8.6 Water and Wastewater.....	2-102
2.8.7 Solid Waste.....	2-104
2.8.8 Community Facilities and Recreation.....	2-104
CHAPTER 3.0 - IMPACT ANALYSES.....	3-1
3.1 Introduction.....	3-1
3.2 Assumptions and Analysis Guidelines.....	3-2
3.3 Methods of Analysis.....	3-9



# TABLE OF CONTENTS (cont.)

	<u>PAGE</u>
3.3.1 Introduction.....	3-9
3.3.2 Assumptions.....	3-10
3.3.2.1 Population - Housing.....	3-11
3.3.2.2 Revenues - Expenditures.....	3-16
3.3.3 Methods of Fiscal Analysis.....	3-22
3.3.4 Sources of Forecasting Data Base.....	3-24
3.3.4.1 Introduction.....	3-24
3.3.4.2 Reference Sources - Published Data.....	3-24
3.3.4.3 Verbal Communication Sources.....	3-25
3.3.5 Perspective on Analysis and Forecasting.....	3-26
3.3.5.1 Introduction.....	3-26
3.3.5.2 Discussion.....	3-26
3.4 Proposed Action.....	3-27
3.4.1 Employment.....	3-27
3.4.1.1 Summary.....	3-27
3.4.1.2 Employment Calculations.....	3-29
3.4.2 Population Impact.....	3-31
3.4.2.1 Summary.....	3-31
3.4.2.2 Population Calculations.....	3-42
3.4.3 Housing.....	3-47
3.4.4 Local Government and Public Finance.....	3-60
3.4.4.1 Summary.....	3-60
3.4.4.2 Fiscal Impact Calculations--Generated Tax Revenues.....	3-73
3.4.4.3. Fiscal Impact Calculations--Distribution of Generated Tax Revenues and Anticipa- ted Expenditures.....	3-84
3.4.4.4. Budgetary Impacts of the Mt. Hope Pro- ject - Unadjusted.....	3-143
3.4.4.5 Budgetary Impact of the Mt. Hope Project - Adjusted.....	3-145
3.4.5 Attitudes and Lifestyles.....	3-147
3.4.5.1 Summary.....	3-147
3.4.5.2 Review of Assessment Details.....	3-149
3.4.6 Community Services and Facilities.....	3-160
3.5 Alternatives.....	3-168
3.5.1 Employment.....	3-169
3.5.2 Population Impact.....	3-169
3.5.2.1 Summary.....	3-169
3.5.2.2 Population Calculations.....	3-171
3.5.3 Housing.....	3-171
3.5.3.1 Summary.....	3-171
3.5.3.2 Calculations.....	3-178
3.5.4 Local Government and Public Finance.....	3-179
3.5.4.1 Summary.....	3-179
3.5.4.2 Calculations.....	3-185
3.5.4.3 Budgetary Impacts of the Mt. Hope Project - Unadjusted.....	3-185
3.5.4.4 Budgetary Impacts of the Mt. Hope Project - Adjusted.....	3-191



# TABLE OF CONTENTS (cont.)

	<u>PAGE</u>
3.5.5 Attitudes and Lifestyles.....	3-194
3.5.6 Community Services and Facilities.....	3-195
3.6 No Action.....	3-198
3.6.1 Employment.....	3-199
3.6.2 Population.....	3-199
3.6.3 Housing.....	3-200
3.6.4 Local Government and Public Finance.....	3-200
3.6.5 Attitudes and Lifestyles.....	3-201
3.6.6 Community Services and Facilities.....	3-201
CHAPTER 4.0 - LIST OF PREPARERS.....	4-1
CHAPTER 5.0 - SOCIOECONOMICS GLOSSARY.....	5-1
CHAPTER 6.0 - BIBLIOGRAPHY.....	6-1
APPENDIX 9-A Redistribution of the State Sales Tax Components.....	A-1
APPENDIX 9-B Information Pertinent to Power Line and State Route 278 Activity.....	B-1



# LIST OF TABLES

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
1-1	Summary Details of the Proposed and Alternatives Including the No Action Alternative.....	1-11
2-1	Population of Selected Nevada Counties: 1920-1980.....	2-2
2-2	Population Density of Selected Nevada Counties: 1920-1980.....	2-3
2-3	Population of Selected Incorporated and Census Designated Places: 1950-1980.....	2-6
2-4	Urban and Rural Population of Nevada Counties: 1950, 1960, 1970 and 1980.....	2-7
2-5	Net Migration in Nevada By County: 1970-1980.....	2-8
2-6	Population Projections for Selected Counties in Nevada.....	2-10
2-7	Percent Unemployment for Selected Years.....	2-13
2-8	Unemployment Rate (Percent) for Selected Nevada Counties.....	2-14
2-9	Nevada Employment by Industry by County 1971 and 1980.....	2-15
2-10	1981 Employment by Major Economic Sector Eureka County.....	2-17
2-11	1982 Employment by Major Economic Sector Eureka County.....	2-18
2-12	1981 Employment by Major Economic Sector Elko County.....	2-19
2-13	1982 Employment by Major Economic Sector Elko County.....	2-20
2-14	1981 Employment by Major Economic Sector Lander County.....	2-21
2-15	1982 Employment by Major Economic Sector Lander County.....	2-22
2-16	1981 Employment by Major Economic Sector Nye County.....	2-23



# LIST OF TABLES (cont.)

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
2-17	1982 Employment by Major Economic Sector Nye County.....	2-24
2-18	1981 Employment by Major Economic Sector White Pine County.....	2-25
2-19	1981 Employment by Major Economic Sector White Pine County.....	2-26
2-20	Employment Sector and Percent Share - Annual Review, Eureka County.....	2-27
2-21	Estimated Per Capita Personal Income.....	2-29
2-22	Per Capita Personal Income by County: Selected Years 1959-1979.....	2-30
2-23	Estimated Average Weekly Earnings, Average Hourly Earnings, and Average Hours for Selected Nevada Industries: 1970-1980.....	2-32
2-24	Value of Nonfuel Production in Nevada, By County.....	2-36
2-25	Selected Characteristics of Counties in Nevada: 1981.....	2-44
2-26	Selected Administrative Services, Special Districts and Programs, Eureka County.....	2-45
2-27	Selected Characteristics of Nevada's Incorporated Cities: 1981.....	2-47
2-28	Type of Government of Unincorporated Towns in Nevada: 1981.....	2-48
2-29	Selected Administrative Services, Special Districts and Programs.....	2-49
2-30	Selected Administrative Services for the Cities of Elko, Carlin and Wells, Elko County.....	2-50
2-31	Federal Outlays by Federal Agency in Nevada by County: Fiscal Year 1980.....	2-53
2-32	Sales Tax Revenue Collection for Eureka and Elko Counties.....	2-59
2-33	Gasoline Tax Revenues for Eureka and Elko.....	2-60



LIST OF TABLES (cont.)

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
2-34	Cigarette Tax Revenues for Eureka, Elko and White Pine Counties.....	2-61
2-35	Distribution of Liquor Tax Revenues for Eureka and Elko Counties.....	2-62
2-36	Ad Valorem Tax (Property Tax) Revenue and Assessed Valuation of Property for Eureka and Elko Counties.....	2-63
2-37	Senior Citizen Programs - Property Tax Rebates for Eureka and Elko Counties.....	2-64
2-38	Selected County Budgets 1979-80, 1980-81.....	2-65
2-39	Town of Eureka Budget Fiscal Year 1980-81 and 1982-83.....	2-67
2-40	Revenues and Expenditures of Local Jurisdictions.....	2-68
2-41	Number of Occupied Housing Units for Selected Counties in Nevada 1950, 1960, 1970 and 1980.....	2-71
2-42	Value of Owner Occupied Housing and Contract Rent of Renter Occupied Housing in Nevada by County: 1970 and 1980.....	2-72
2-43	Housing Type - Historical Review Eureka County.....	2-74
2-44	Housing Type - Historical Review Elko County.....	2-76
2-45	Eureka County Health and Medical Expenses Fiscal Year 1981-1982.....	2-90
2-46	Health and Human Services Utilized by Eureka County Residents.....	2-91
2-47	Licensed Physicians, Dentists and Nurses by County per 1,000 Population: 1981.....	2-93
2-48	Elko County Health and Medical Expenses (FY 1981-82) and Elko General Hospital Information (1980).....	2-94
2-49	Elko Fire Protection.....	2-98



# LIST OF TABLES (cont.)

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
2-50	Telephones in Use by County for Selected Years: 1960-1981.....	2-99
2-51	Newspapers and Publications with Daily or Less Than Daily Circulation: 1981.....	2-100
2-52	Federal/State Agencies and Community Organizations in the Town of Eureka.....	2-106
2-53	Community Services, Outdoor Sport Facilities and Parks in Elko County.....	2-108
3-1	Local and Non-Local Distribution of Total Workforce.....	3-5
3-2	Estimated Skill Mix of Operational Labor Force.....	3-6
3-3	Local and Non-Local Employment and Populations.....	3-30
3-4	Construction Personnel: Characteristics.....	30-32
3-5	Direct-Hire Operations Personnel: Characteristics.....	3-33
3-6	Manpower Levels by Quarter and Corresponding Family Characteristics Direct Project Personnel Type (Includes Local Hire).....	3-34
3-7	Summary Manpower Levels by Quarter: Total Professional and Labor.....	3-35
3-8	Generated Employment Multipliers (By Construction and Direct-Hire Personnel).....	3-36
3-9	Generated Employment (Non-basic Jobs).....	3-37
3-10	Manpower Levels by Quarter and Corresponding Family Characteristics.....	3-38
3-11	Stable Annual Populations.....	3-41
3-12	Historic Populations and Current Projections.....	3-43
3-13	Employee Distribution - Stabilized.....	3-45



# LIST OF TABLES (cont.)

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
3-14	Stable Annual Populations and Distribution Percentage Characteristics.....	3-46
3-15	Quarterly Forecasts of Project and Generated Population Effects on Communities: Case 5-A, Proposed Action.....	3-48
3-16	Summary of Project and Generated Populations by Place by Quarter.....	3-49
3-17	Locational Distribution of Workforce by Quarter: Direct Project Personnel.....	3-50
3-18	Summary of Workforce Population Distribution by Quarter: Direct Project Personnel.....	3-52
3-19	Estimated Total Housing Units Needed for Peak and Stabilized Project Influence Periods.....	3-54
3-20	Estimated Housing Type Preference of Population Influx.....	3-55
3-21	Quarterly Estimation of Housing Unit Numbers, Type and Property Tax Revenue: Operations Employment and Secondary Employment, Proposed Action...	3-56
3-22	Construction Crew Housing Demands, Market Values and Ad Valorem Property Taxes.....	3-57
3-23	Combined Total Households Non-Local Operations and Generated Secondary Employment.....	3-58
3-24	Annual Tax Revenues Generated by the Project and Distributed to Jurisdictions (1982 \$) Subdivision Case 5-A.....	3-65
3-25	Net Project-Related Mid-Term Budgetary Shortfalls in Individual Accounts, Proposed Action.....	3-67
3-26	Expenditures per Student for Five Most Directly Applicable Teaching Costs.....	3-68
3-27	Mine/Process Plant Personal Spending and Tax Consequences (Estimated).....	3-75
3-28	Sales Taxes Paid by Individuals, \$66.95 Per Capita/Year.....	3-78

CHAPTER IV

1840	...	...
1841	...	...
1842	...	...
1843	...	...
1844	...	...
1845	...	...
1846	...	...
1847	...	...
1848	...	...
1849	...	...
1850	...	...
1851	...	...
1852	...	...
1853	...	...
1854	...	...
1855	...	...
1856	...	...
1857	...	...
1858	...	...
1859	...	...
1860	...	...
1861	...	...
1862	...	...
1863	...	...
1864	...	...
1865	...	...
1866	...	...
1867	...	...
1868	...	...
1869	...	...
1870	...	...
1871	...	...
1872	...	...
1873	...	...
1874	...	...
1875	...	...
1876	...	...
1877	...	...
1878	...	...
1879	...	...
1880	...	...
1881	...	...
1882	...	...
1883	...	...
1884	...	...
1885	...	...
1886	...	...
1887	...	...
1888	...	...
1889	...	...
1890	...	...
1891	...	...
1892	...	...
1893	...	...
1894	...	...
1895	...	...
1896	...	...
1897	...	...
1898	...	...
1899	...	...
1900	...	...

LIST OF TABLES (cont.)

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
3-29	Forecast Project Populations and Characteristics: Direct Hire and Generated, Subdivision Case 5-A (Constant Workforce) Local Hires Excluded.....	3-80
3-30	Distribution of Ad Valorem Residential Property Tax Revenues Annually, Eureka and Elko Counties.....	3-81
3-31	Sales and Ad Valorem Mine/Process Plant Property Tax Base, Tax Revenues Collectible and Tax Revenues Distribution - Eureka County.....	3-83
3-32	Revenues and Expenditures of Local Jurisdictions (Normal Annual Recurrent).....	3-87
3-33	Annual Revenues and Expenditures Per Capita, Towns, Counties, School Districts (in dollars).....	3-88
3-34	Quarterly Revenues and Expenditures Per Capita, Towns, Counties, School Districts (in dollars).....	3-89
3-35	School District General Fund Expenditures Per School (Per Average Number of Schools in Each District).....	3-94
3-36	Total Expenditures and Per Student Costs of General Fund Budgets Only Year End 1979, 1980.....	3-95
3-37	Breakdown of School District Expenditures - I Out of General Fund Only Annual Totals: 1978-79, 1979-80 (\$000).....	3-96
3-38	Breakdown of School District Expenditures - II Out of General Fund Only Annual Totals: 1978-79, 1979-80 (\$000).....	3-97
3-39	Breakdown of School District Expenditures - III Out of General Fund Only Annual Totals: 1978-79, 1979-80 (\$000).....	3-98
3-40	Breakdown of School District Expenditures - IV Out of General Fund Only Per Student Enrolled: 1978-79, 1979-80 (\$000).....	3-99
3-41	Breakdown of School District Expenditures - V Out of General Fund Only <u>Excluded Expenses</u> : 1978-79, 1979-80 (\$000).....	3-100
3-42	School District General Fund Expenditures in Percent as Direct and Indirect Teaching Costs (Elko and Eureka 1978-79, 1979-80).....	3-101



LIST OF TABLES (cont.)

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
3-43	School District General Fund Expenditures in Percent as Direct and Indirect Teaching Costs (1978-79, 1979-80).....	3-102
3-44	School District General Fund Expenditures in Percent as Direct and Indirect Teaching Costs (1978-79, 1979-80).....	3-103
3-45	Data for Regression Analysis: Per Student Costs Variation with Number of Students.....	3-106
3-46	Regression Model Predictions of Student Cost Variation With Change in Number of Students (1978-79, 1979-80 Base Year).....	3-109
3-47	Regression Model Predictions of Student Cost Variation With Change in Number of Students (1978-79, 1979-80 Base Year).....	3-111
3-48	Possible Application of School District Regression Analysis of Declining Expenditures Per Student (1978-79, 1979-80 Base Year).....	3-114
3-49	Eureka School District Budget of 1982-83 and Adjustments to Entries.....	3-115
3-50	Application of Adjustments to Forecast of Eureka School District Revenues and Expenditures.....	3-117
3-51	Costs Forecasts of School District Impacts-- Adjusted, Unadjusted.....	3-118
3-52	County Auditor's Reports All Fund Sources, Year Ending 6-30-82.....	3-120
3-53	Regression Analysis of County Expenditures Per Capita: Variation with Size of Population (Year Ending June 30, 1982) Audited Budgets.....	3-121
3-54	Linear Regression Models of County Cost 5-County Population Expenditures.....	3-123
3-55	Possible Application of County Regression Analysis of Declining Expenditures Per Capita (Audited Budget Data Comparisons).....	3-125
3-56	Application of Adjustments to Forecast of Eureka County Revenues and Expenditures.....	3-126



# LIST OF TABLES (cont.)

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
3-57	County Cost Economies of Scale--Unadjusted and Adjusted.....	3-127
3-58	Net Quarterly Expenditures Generated by Project as Year-End Totals.....	3-129
3-59	Annual Budget Balances: Years 4-15 1987-1998.....	3-130
3-60	Ad Valorem Residential Property Tax Revenues and Distributions: Eureka, Elko Jurisdictions Derived from Direct-Hire and Generated Employment.....	3-133
3-61	Tax Revenues Generated by Project Quarterly During First Four Years.....	3-134
3-62	Quarterly Tax Revenues Generated by Project as Year-End Totals.....	3-135
3-63	Tax Revenues Generated by Project Annually (Rounded).....	3-136
3-64	Net Quarterly Expenditures Generated by Project at Year-End Totals and Project Generated Revenues.....	3-137
3-65	Annual Budget Balances: Year 4- Year 5.....	3-138
3-66	Extended Average Annual Budget Balances in 5 Year Intervals.....	3-139
3-67	Net Quarterly Revenues and Expenditures Generated by Project as Year-End Totals.....	3-140
3-68	Annual Budget Balances: Years 4-15 1987-1998.....	3-141
3-69	Net Project-Related Mid-Term Budgetary Shortfalls in Individual Accounts.....	3-142
3-70	School Age Children: Normal Populations (Without Project) Quarterly First Four Years.....	3-161
3-71	School Age Children: E.M.C. and Generated Workers - Quarterly First Four Years.....	3-162
3-72	School Age Children and Classrooms Year End Totals.....	3-163
3-73	Locational Distribution of Manpower by Quarter: Direct Project Personnel (Excludes Local Hire).....	3-172



# LIST OF TABLES (cont.)

<u>TABLE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
3-74	Locational Distribution of Generated Employment X Place X Quarter X Alternative Case.....	3-173
3-75	Forecast Project Populations and Characteristics: Direct-Hire and Generated Dispersed Personnel Case (Constant Workforce) Local Hires Encluded.....	3-174
3-76	Population Effects on Communities of E.M.C. and Generated Populations, Dispersed Personnel Case, By Quarter.....	3-175
3-77	Mine/Process Plant Operations and Generated Housing X Number and Type and Property Tax Revenue, Dispersed Personnel Case.....	3-177
3-78	Annual Tax Revenue Generated by the Project and Distributed to Jurisdiction (1982\$) (Decentralized Workers (Case 5-B)).....	3-180
3-79	Net Project-Related Mid-Term Budgetary Shortfalls in Individual Accounts (Alternate 5-B).....	3-182
3-80	Net Quarterly Revenues and Expenditures Generated by Project as Year-End Totals.....	3-186
3-81	Tax Revenues Generated by Project Annually (Rounded)...	3-187
3-82	Annual Budget Balances: Year 5-15, Unadjusted.....	3-189
3-83	Extended Average Annual Budget Balances in 5-Year Intervals, Unadjusted.....	3-192



# LIST OF FIGURES

<u>FIGURE NO.</u>	<u>TITLE</u>	<u>PAGE</u>
1-1	State Map of Nevada.....	1-3
1-2	Proposed Project and Land Acquisition Area Map, Alternative 1-A.....	1-4
1-3	Regional Study Area Map Showing Proposed Action Components.....	1-5
1-4	Proposed Action.....	1-6
1-5	Regional Study Area Map Showing Alternative Components 2 and 3 to the Proposed Action.....	1-7
1-6	Alternative Routing Corridors For Water Line Right-of-Way.....	1-8
1-7	Regional Study Area Map Showing Alternative Component 4 to the Proposed Action.....	1-9
1-8	Alternative Land Acquisition Area.....	1-10
2-1	Historical Population of Eureka County, Nevada.....	2-5
3-1	Total Workforce Estimate.....	3-4
3-2	Historic and Projected Population Growth in Eureka County.....	3-40



## CHAPTER 1.0

### INTRODUCTION

#### 1.1 Introduction

This technical report presents detailed information concerning the socioeconomic resource base and any significant potential impacts to that resource base upon implementation of the proposed action and/or alternatives.

#### 1.2 Project Description

Technical Report No.1 and Chapter 2.0 of the Mt. Hope Molybdenum Project EIS detail the proposed action and alternatives. In brief, the Mt. Hope Molybdenum Project Environmental Impact Statement (EIS) (including Technical Report Nos.1 thru 9) have been prepared in response to an EXXON Minerals Company (EXXON) proposal submitted to the Bureau of Land Management (BLM) for the purchase of public lands under Section 203 of the Federal Land Policy and Management Act (FLPMA) of 1976. Although the land purchase proposal is the action which occasions the Environmental Impact Statement (EIS) process, there are other federal decisions which must be made before EXXON may proceed. Among these are the granting of power, water line and highway relocation rights-of-way and the approval of a Plan of Operation.

The primary purpose of the proposed sale of public lands involves the planned activities of EXXON which has for some time been conducting preliminary feasibility studies assessing the development of a molybdenum deposit in the vicinity of Mt. Hope near Eureka, Nevada. As part of the EIS process, EXXON has detailed its preliminary plans concerning project development. The Mt. Hope project includes the development of an open-pit mine, non-mineralized material storage areas (2), a process plant complex of approximately 100 acres and a tailings material disposal site. As support features to the project, a proposed water line and power line would also be necessary. The proposed tailings pond site would, if implemented, require an approximate six mile relocation of an existing state highway (State Route 278).



Figures 1-1 through 1-8 show project area location and depict the proposed action and alternatives (except the location of a subdivision plat). Table 1-1 outlines the components of the proposed action and alternatives, including the no action alternative.

### 1.3 Baseline Data Development

Early in the EIS process, the BLM and EXXON agreed in a Memorandum of Understanding (MOU) that the EIS process of data collection, analysis and documentation would be assisted by the involvement of an independent third party consultant, Wyatt Research and Consulting, Inc. (WRC). WRC initiated its involvement as an oversight quality assurance consultant in the development of a project source document for subsequent use in developing the Mt. Hope Molybdenum Project EIS. Entitled the Mt. Hope Molybdenum Project Environmental Impact Report (EIR), the source document included two chapters of information concerning environmental resources (baseline data and impact analyses) prepared by WRC with assistance from the BLM and available study results of EXXON (e.g., cultural resources consultant report, geology, etc.). During the preparation of the source document and continuing throughout the EIS process, WRC has collected, reviewed and analyzed pertinent data in each of the necessary topical areas of environmental resources.

This technical report documents the majority of information gathered and analyzed that was pertinent to socioeconomic resources. The primary sources of published socioeconomic resource information included the following (Chapter 6.0, Bibliography, details individual source titles):

- 1) Bureau of Business and Economic Research, University  
of Nevada, Reno
- 2) State of Nevada, Nevada Employment Security Department
- 3) State of Nevada, Office of Community Services
- 4) State of Nevada, Nevada Statistical Abstract
- 5) State of Nevada, Nevada Department of Taxation



OREGON

IDAHO

SALT LAKE CITY

UTAH

NEVADA

RENO

Carson City

FRESNO

CALIFORNIA

LAS VEGAS

ARIZONA

Battle Mountain

Elko

Carlin

Mt. Hope

Austin

Eureka

Ely

BATTLE MOUNTAIN  
BLM DISTRICT

SCALE: APPROX.

0 88.5 KM

0 55 MILES

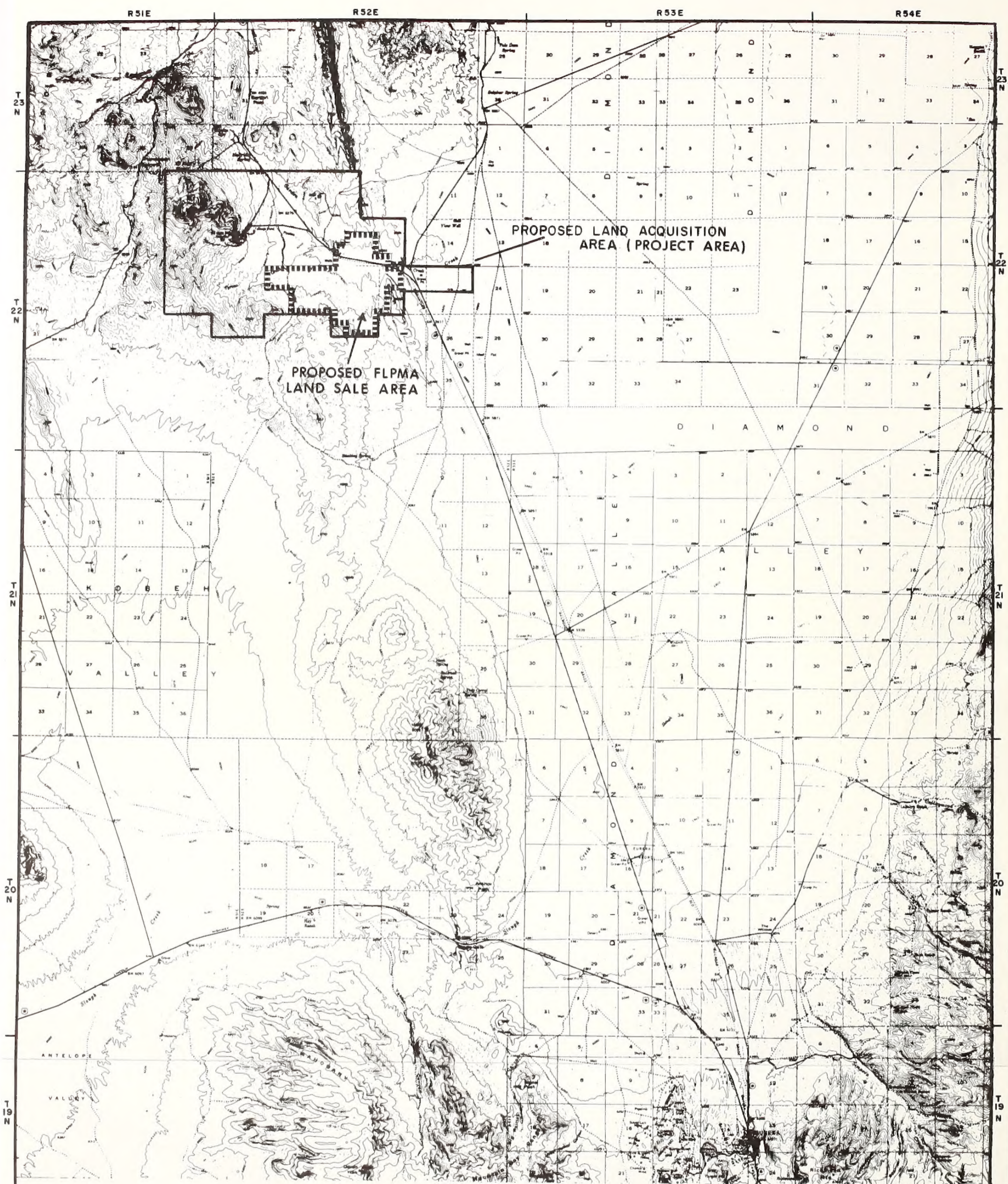
MT. HOPE  
MOLYBDENUM PROJECT

STATE MAP OF  
NEVADA

U.S. Department of the Interior  
Bureau of Land Management

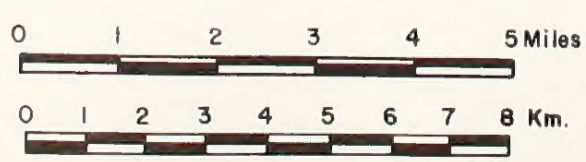
FIGURE  
1-1





—— PROPOSED LAND ACQUISITION AREA (PROJECT AREA)

■■■■■■■■■■ ESTIMATION OF APPROXIMATE FEDERAL LAND  
POLICY AND MANAGEMENT ACT (FLPMA)  
SALE AREA



MT. HOPE MOLYBDENUM PROJECT

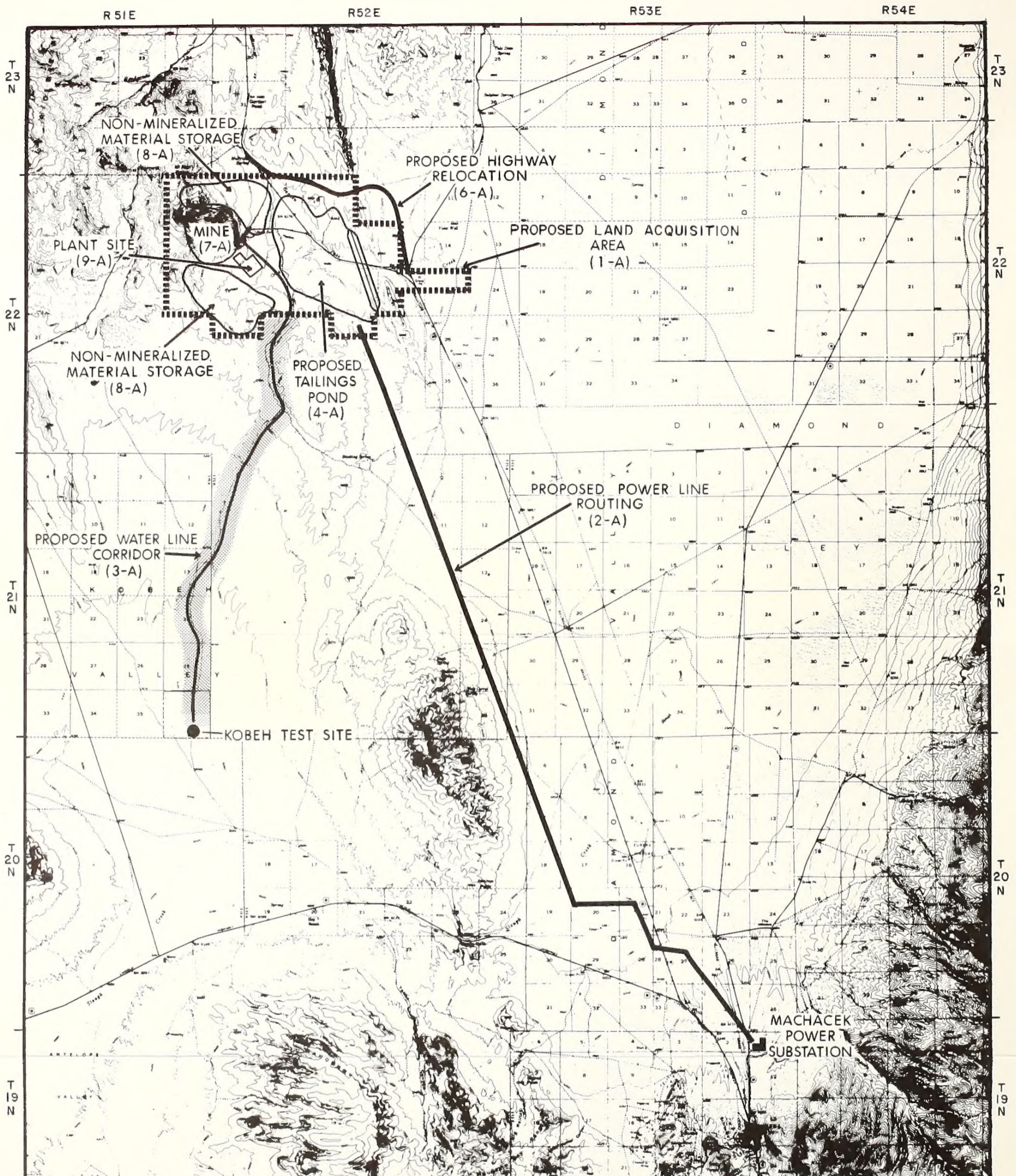
PROPOSED PROJECT AND LAND  
ACQUISITION AREA MAP  
ALTERNATIVE 1-A

U.S. Department of the Interior  
Bureau of Land Management

FIGURE 1-2

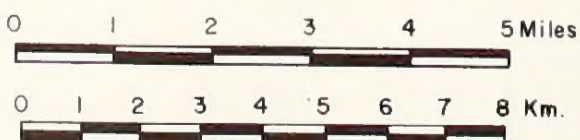
BASE: USGS TOPO QUADRANGLES, GARDEN VALLEY, WHISTLER MTN., DIAMOND SPRINGS  
& EUREKA, NEVADA.





..... PROPOSED LAND ACQUISITION AREA BOUNDARY

\*NOTE: COMPONENT 5-A (HOUSING SUBDIVISION) NOT SHOWN.  
ALTERNATIVE 1-A (INCLUDING FLPA LAND SALE AREA) SHOWN  
ON FIGURE 2-1.



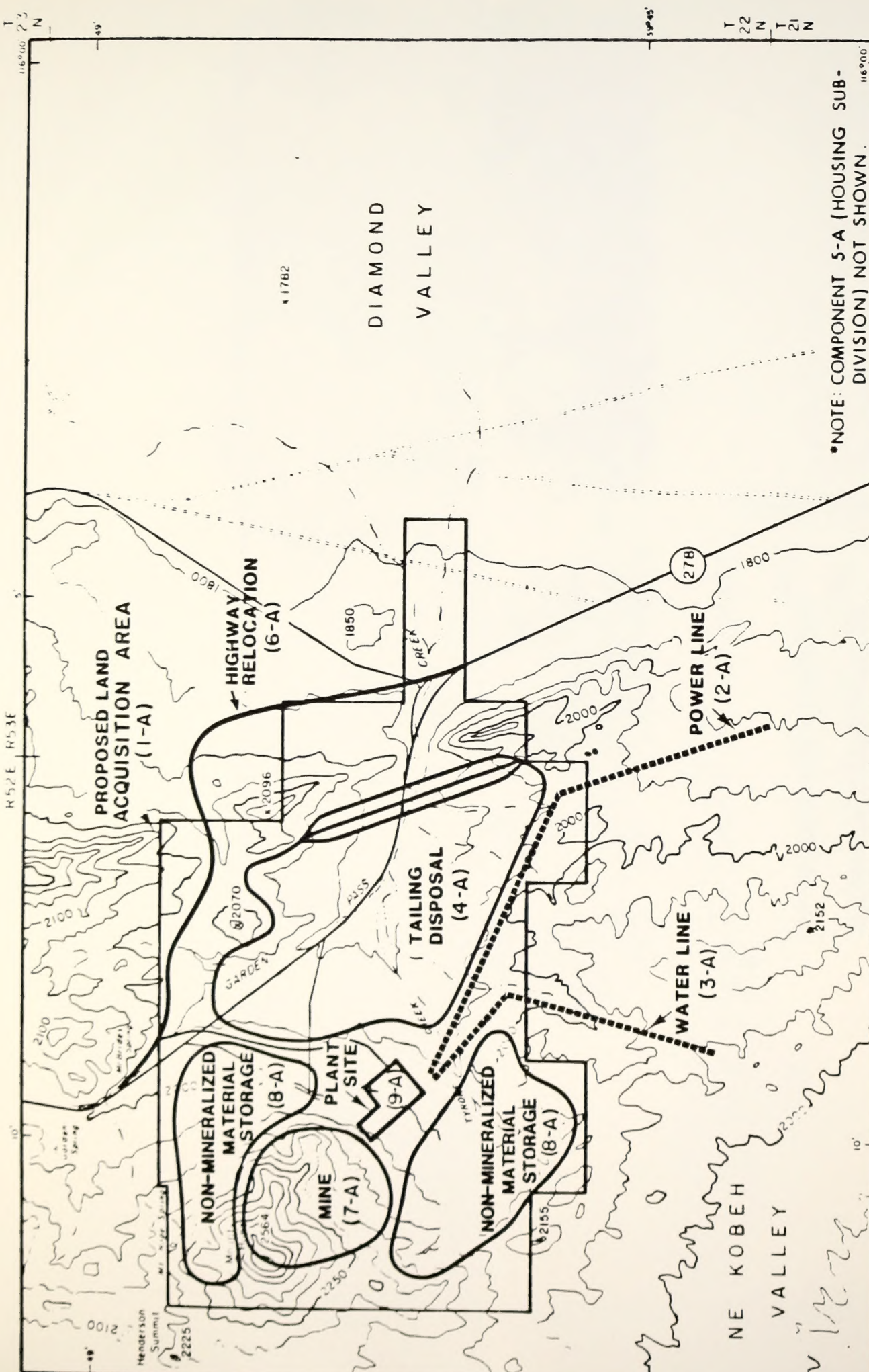
BASE: USGS TOPO QUADRANGLES, GARDEN VALLEY, WHISTLER MTN., DIAMOND SPRINGS  
& EUREKA, NEVADA.

**MT. HOPE MOLYBDENUM PROJECT**  
**REGIONAL STUDY AREA MAP**  
**SHOWING**  
**PROPOSED ACTION COMPONENTS**

U.S. Department of the Interior  
Bureau of Land Management

FIGURE 1-3





NOTE: COMPONENT 5-A (HOUSING SUB-DIVISION) NOT SHOWN.

MT. HOPE MOLYBDENUM PROJECT

PROPOSED ACTION

FIGURE 1-4

LEGEND

- EPHEMERAL STREAM
- SPOT ELEVATION
- 50 METER CONTOUR
- 250 METER CONTOUR
- STATE ROUTE
- PROPOSED PROJECT AREA BOUNDARY

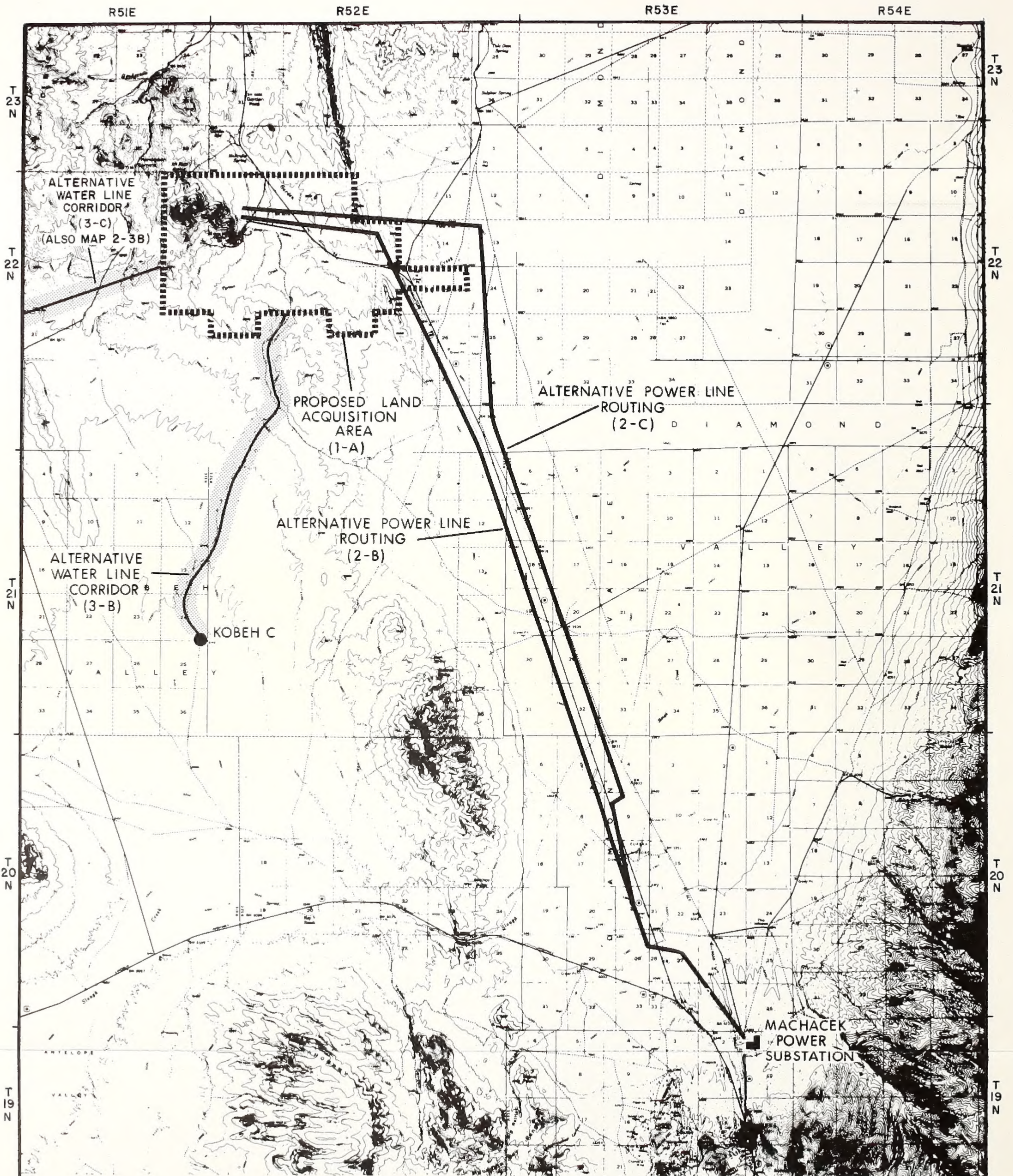
CONTOUR INTERVAL 50 METERS (164 FT)

0 1/2 1 2 MILES

0 1/2 1 2 3 KM

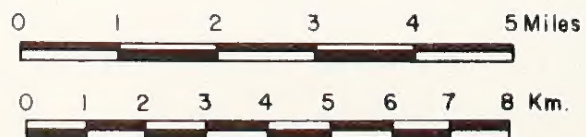
USGS TOPO QUADRANGLES, GARDEN VALLEY, NEVADA





----- PROPOSED LAND ACQUISITION AREA BOUNDARY

\*NOTE: ENTIRE EXTENT OF WATER LINE CORRIDOR 3-C NOT SHOWN, REFER TO FIGURE 2-3B



BASE: USGS TOPO QUADRANGLES, GARDEN VALLEY, WHISTLER MTN., DIAMOND SPRINGS & EUREKA, NEVADA.

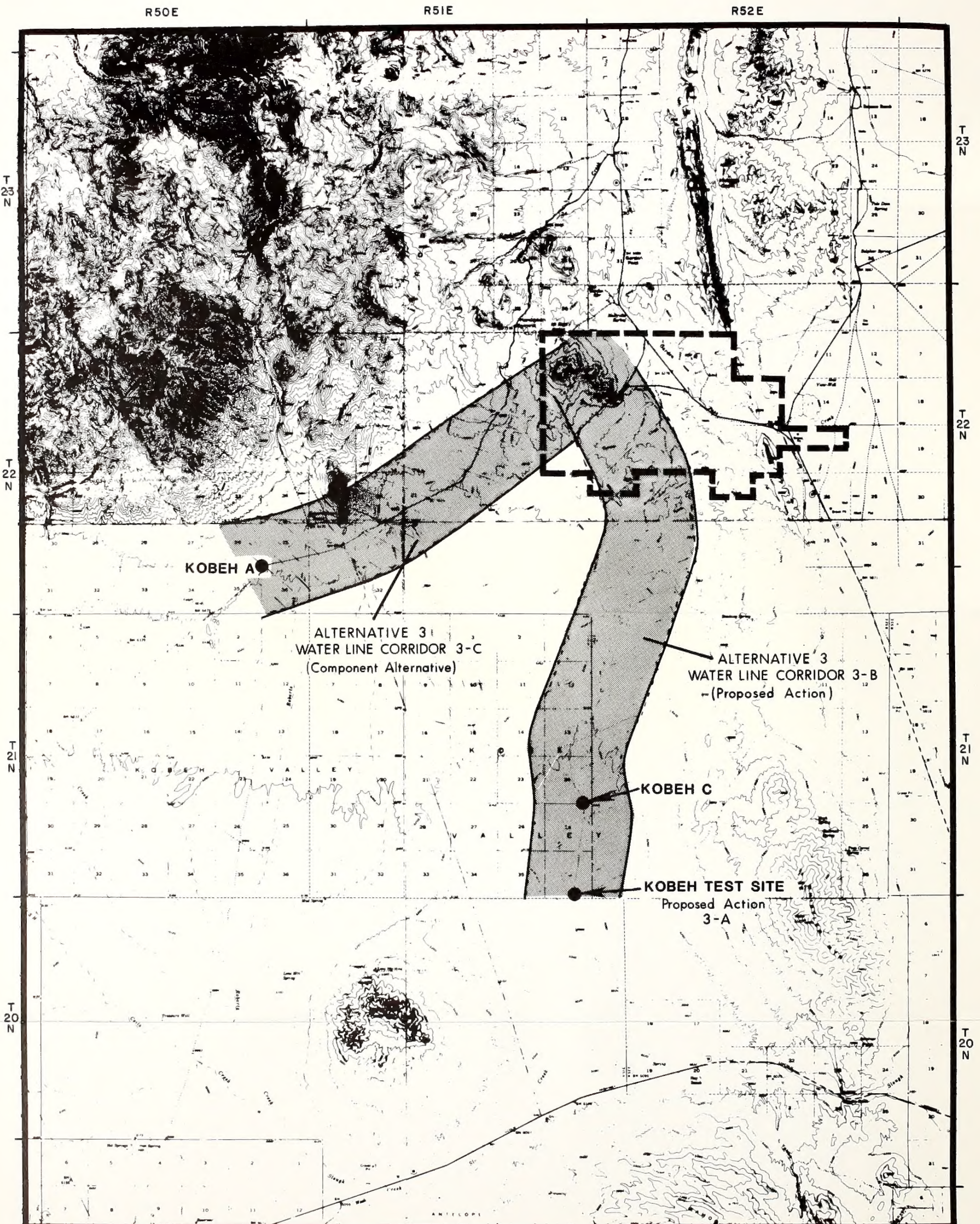
MT. HOPE MOLYBDENUM PROJECT

REGIONAL STUDY AREA MAP  
SHOWING ALTERNATIVE COMPONENTS  
2 AND 3 TO THE PROPOSED ACTION

U.S. Department of the Interior  
Bureau of Land Management

FIGURE 1-5





**PROPOSED LAND ACQUISITION AREA BOUNDARY**

**ALTERNATIVE WATER LINE RIGHT-OF-WAY**



0 1 2 3 4 5 Miles

0 1 2 3 4 5 6 7 8 Km

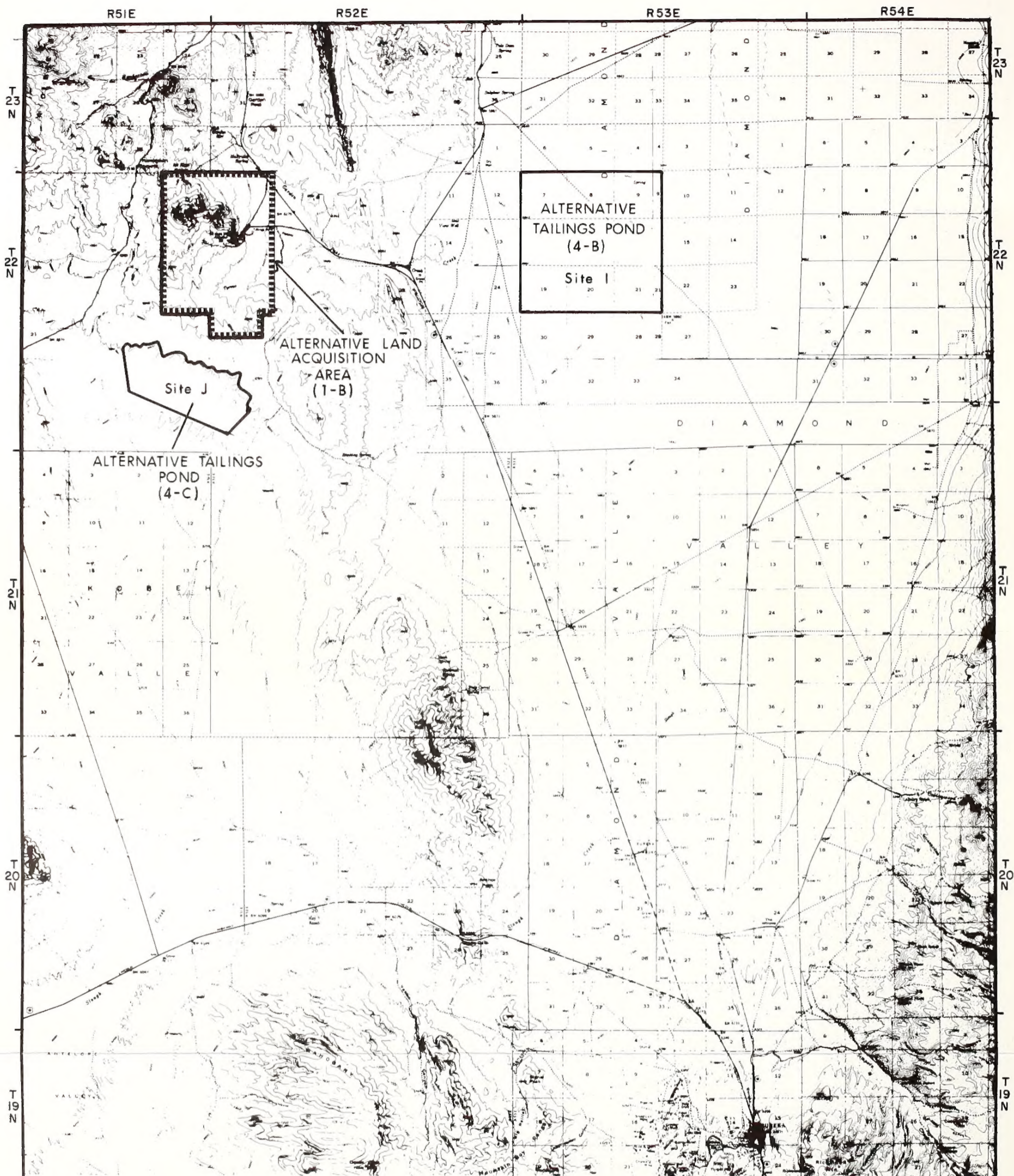
**MT. HOPE MOLYBDENUM PROJECT**

**ALTERNATIVE ROUTING CORRIDORS  
FOR WATER LINE RIGHT-OF-WAY  
(ALTERNATIVE 3 CONTINUED FROM FIGURE 2-3A)**

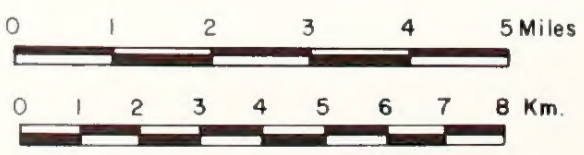
U.S. Department of the Interior  
Bureau of Land Management

**FIGURE 1-6**





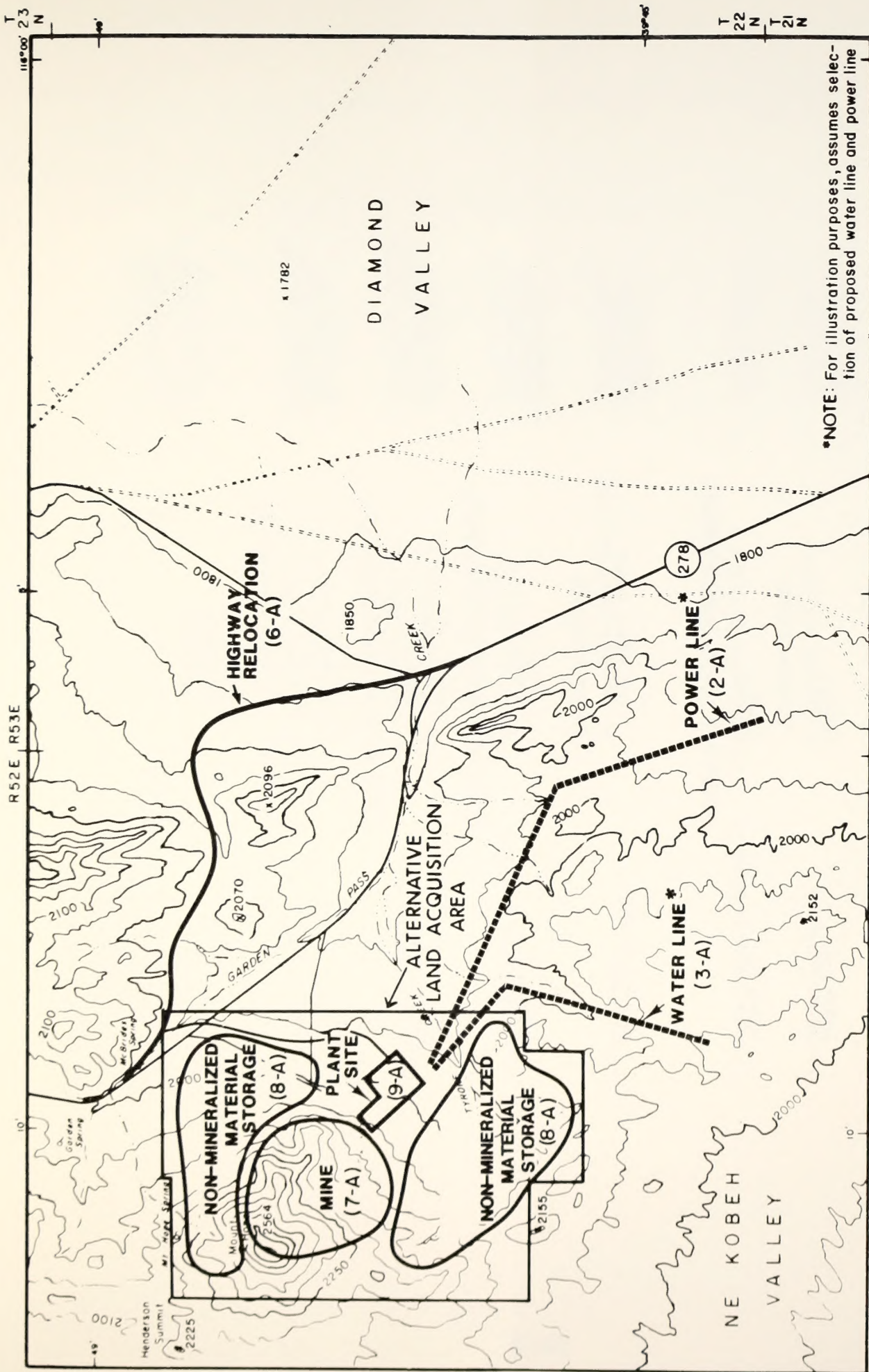
----- ALTERNATIVE LAND ACQUISITION AREA BOUNDARY



BASE: USGS TOPO QUADRANGLES, GARDEN VALLEY, WHISTLER MTN., DIAMOND SPRINGS & EUREKA, NEVADA.

MT. HOPE MOLYBDENUM PROJECT	
REGIONAL STUDY AREA MAP SHOWING ALTERNATIVE COMPONENT 4 TO THE PROPOSED ACTION	
U.S. Department of the Interior Bureau of Land Management	FIGURE 1-7





\*NOTE: For illustration purposes, assumes selection of proposed water line and power line

MT. HOPE MOLYBDENUM PROJECT

ALTERNATIVE LAND ACQUISITION AREA

U.S. Department of the Interior  
Bureau of Land Management

FIGURE 1-8

LEGEND

EPHEMERAL STREAM

SPOT ELEVATION

50 METER CONTOUR

250 METER CONTOUR

STATE ROUTE

MAP AREA

NEVADA

CONTOUR INTERVAL 50 METERS (164 FT.)

0 1/2 1 2 MILES

0 1/2 1 2 3 KM

BASE: USGS TOPO QUADRANGLES, GARDEN VALLEY & WHISTLER MTN., NEVADA.



Table 1-1 Summary Details of the Proposed Action and Alternatives Including the No Action Alternative

<u>Proposed Action</u>	<u>Alternative 1 - Land Acquisition Components</u>	<u>No Action Alternative</u>
1-A Land Sale by FLPMA	1-B Mineral Claims 1-C Land Use Lease 1-D Land Use Permit 1-E Land Exchange	Negative or no decision regarding land sale.
2-A Power Line Routing A (Figure 1-2)	<u>Alternative 2 - Power Line Routing Components</u> 2-B Alternative Routing 2-B (Figure 1-4) 2-C Alternative Routing 2-C (Figure 1-4)	No power line right-of-way granted. Assumes the Mt. Hope Project will not proceed.
3-A Water Line Routing A (Figure 1-2)	<u>Alternative 3 - Water Line Routing Components</u> 3-B Alternative Routing 3-B (Figure 1-4) 3-C Alternative Routing 3-C (Figure 1-5)	No water line right-of-way granted. Assumes the Mt. Hope Project will not proceed.
4-A Tailings Pond at Location 4-A (Figure 1-3)	<u>Alternative 4 - Tailings Pond Sites Components</u> 4-B Alternative Site 4-B 4-C Alternative Site 4-C (Figure 1-4)	Not part of federal decision-making. Assumes no project implementation.
5-A Subdivision (Not shown on figure)	<u>Alternative 5 - Housing</u> 5-B Decentralized Workforce Housing (Not shown on figure)	Not part of federal decision-making. Assumes no project implementation.
6-A Highway Relocation Routing 6-A (Figure 1-3)	<u>Alternative 6 - Highway Relocation Component</u> No reasonable alternatives available <u>Alternative 7 - Mine</u> No reasonable alternatives available	No road relocation right-of-way granted.
7-A Mine at Location 7-A (Figure 1-3)	<u>Alternative 8 - Non-Mineralized Material Storage Areas</u> 8-A Non-Mineralized Material Storage at Location 8-A (Figure 1-3)	Not part of federal decision-making. Assumes no project implementation.
9-A Process Plant at Location 9-A (Figure 1-3)	<u>Alternative 9 - Process Plant</u> No alternatives proposed. (Proposed action is worst-case. See text).	Not part of federal decision-making. Assumes no project implementation.



- 6) U.S. Department of Commerce, Bureau of Economic Analysis
- 7) County of Eureka General Plan, Eureka County

Substantial personal communication was required in Eureka County to assure a data base of adequacy pertinent to specific Eureka Counties entity characteristics. Individual(s) involved with the following entity groups were interviewed to obtain the necessary specific data and/or to provide supplemental unpublished data (particularly 1982-1983 unpublished data).

- 1) Eureka County School District
- 2) Eureka County Commissioners Office
- 3) Eureka County Sheriffs Department
- 4) Eureka County Volunteer Fire Department
- 5) Diamond Valley Volunteer Fire Department
- 6) Crescent Valley Volunteer Fire Department
- 7) Eureka County Public Works Department
- 8) Eureka County Tax Assessors Office
- 9) First Interstate Bank of Nevada, Eureka Branch
- 10) Eureka County Clerks Office

As necessary, the manner in which the data reported in the referenced sources was collected (i.e., facility tours, etc.) is discussed in appropriate sections (e.g., details concerning collection of data regarding lifestyles and attitudes).

#### 1.4 Impact Analyses Methodology

In the event of any discrepancies between this technical report and the EIS, the material presented in the EIS shall supercede that which is presented in this technical report. Determination of potential impacts resultant of implementing the proposed action and/or alternatives emphasized analysis of: 1) project specific changes, in quantitative terms, in the baseline socioeconomic characteristics of population, employment and income, housing and local government; 2) qualitative effects upon community facilities and



services, as well as the indirect effect of such change upon community lifestyles and attitudes; and, 3) fiscal impacts relative to project implementation and the associated cost/revenue receipts anticipated to affect Eureka and Elko County.

#### 1.4.1 Project Sensitive Components

The population influx associated with the employment opportunity provided by project implementation would result in significant effects on most, if not all, socioeconomic parameters of characterization. Whereas the employment requirements of the proposed action/alternatives would not necessarily result in such a comprehensive effect in more populous areas (inherently more capable of absorbing or masking the extent of change) the impacts associated with such an employment base in a scarcely populated area like Eureka County can be correctly assumed to encompass all parameters of socioeconomic infrastructure. The assumed population influx of more than 1,000 people, nearly equal to the county's present population basis, allowed the initial assumption of comprehensive impact effects, thereby establishing the mode or method of impact analysis scope.

Realizing the scope of socioeconomic impacts that would be associated with implementation of the project, analyses were conducted in sequential step processes, initiated by estimating annual population increases and then applying the population factors upon each parameter of socioeconomic influence; i.e., income generated and expended; housing selected and subject to income expenditure; governmental financing as affected by sales tax and property tax receipts; and, finally the manner in which public entities expended received monies to support the population communities. The analytical approach additionally incorporated multiple non-population sensitive factors, such as mining proceeds for monies distribution. For the most part, however, the non-population sensitive factors were evaluated as a component of the fiscal impact assessment conducted during latter analyses.

In short, the implementation of the proposed action and/or alternatives would result in the direct quantitative change of the area's socioeconomic infrastructure. As such, the analysis of impacts first determined the extent



of change and then, with a basis of quantitative characteristics, the impacts of the incurred changes were evaluated relative to fiscal impacts within the socioeconomic infrastructure. The evaluation of impact significance relative to fiscal effects was deemed appropriate in that the fiscal relationships within a socioeconomic infrastructure represent the broadest and most comprehensive measurement or indicator of community response to actions affecting that community (i.e., the fiscal resources available to a community and the end use of such resources, directly form the basis of community conditions, both quantitative (e.g., numerically sufficient school facilities) and qualitative (e.g., recreational quality relative to population served)).

The use of a quantitative analytical method additionally provided an evaluation reliant upon objective data interpretations. Subjective analyses have been limited in this EIS effort to the spectrum of community attitudes and lifestyles, a socioeconomic factor with a high, inherent subjectivity relative to analysis.

#### 1.4.2 Fiscal Impact Analyses

Implementation of the proposed action would significantly affect public financing in the region, having both positive and negative effects. Seven jurisdictions are involved: Eureka and Elko counties, Eureka and Elko county school districts, the towns of Eureka and Carlin, and the City of Elko. Each jurisdiction would be affected differently under either the proposed action, alternative, or no action circumstances.

The financial effects of project and alternatives implementation upon each jurisdiction were analyzed extensively utilizing conservative methodologies. Section 3.2 of this Technical Report presents detailed discussion concerning the manner in which the fiscal impact analyses (as well as other components) pertinent to implementation of the Mt. Hope project were conducted. The following subsections summarize the methodologies of analysis.

An analysis of fiscal impacts fundamentally requires the investigation of revenues versus expenditures. Upon implementation, the proposed action (or alternative) would cause certain revenues to be generated while simultaneously



causing area jurisdictions to incur certain expenditures. The fiscal balance, or imbalance, thus created between generated revenues and incurred expenditures significantly affects the eventual magnitude and adversity of social impacts resultant from the action underway.

To determine the fiscal impact of the proposed action, and thus to characterize socioeconomic impact as to beneficial/adverse conditions, conservative and realistic measures were incorporated into the analyses. First, the calculation of project generated revenues was conducted on a directly traceable dollar basis (i.e., tax monies generated by the project and project personnel were directly calculated and traced from origin through distribution). The use of directly traceable revenues allows an unbiased and accurate quantitative establishment of definitive monies that are specific to the project but results in an understated revenue value. Understated revenues result due to the fact that some generated tax monies, particularly those within the General State Fund (see latter discussion), are distributed in a manner not allowing appropriate analytical inclusion to this EIS (the manner of distribution being variable and annually determined as to variability). Additionally, local economies often receive external financing beyond direct tax money return which involves per capita basis requirements (e.g., grants). The use of directly traceable dollars to project revenues, therefore, results in the presentation of generated revenues which do not include General State Fund Monies or per capita special external finance monies commonly utilized by the affected jurisdictions.

The alternative method of revenue establishment would have involved use of a per-capita (\$/person population) estimation procedure which assumes certain set revenue/expenditure values per person and disregards money source. The per-capita method would require use of data not developed specific to the project. Use of a per-capita revenue estimation procedure was considered to be less suitable than the direct dollar trace method and was, therefore, not utilized for final impact assessment procedures.

The second factor in the fiscal analysis involved the measure of revenues distribution to assess expenditure balance or imbalance. The distribution of project generated revenues to each jurisdiction was also calculated



on the basis of direct traceability. Due to Nevada state tax laws, this method of calculation resulted in an underestimate of distributed revenues to the jurisdictions because a large proportion of tax revenues (35 percent of state sales tax) are obtained and distributed by the State under the State General Fund program in a manner not allowing definitive assumptions regarding final destination. Consequently, the calculations of fiscal impacts shown herein are conservative since redistribution of these funds to affected jurisdictions is not included in the analysis to evaluate the offset or impacts. Later discussion documents the quantity of such monies but does not account for its eventual distribution.

The third factor in the fiscal analysis (a per-capita determination of jurisdiction expenditures) resulted in response to the socioeconomic framework of the Eureka area which due to the low population density of the affected Eureka jurisdictions (county, town, school) are highly sensitive to population alterations of even minor extent. Superimposing the tripling of population anticipated (in the Eureka Town area) upon the jurisdictional frameworks without consideration of economies of scales and without deemphasizing special external financing would result in a significant overstatement of eventual realized expenditures.

Thus expenditures were calculated for both direct and secondary (non-EXXON) generated populations using a project specific per-capita rate (1980-1983 budget basis). The fiscal expenditures calculated represent the most-probable case, reflecting the population and direct cost modified per capita rate anticipated through project implementations. As detailed in Section 3.2, a linear regression analysis was made of the relationship between Eureka County populations and expenditure levels and those of Mineral, Humboldt, Lyon and Elko Counties for the period ending June 30, 1982. The linear regression analysis permitted step-wise comparisons by population level of five expenditure items common to each county, and the total of these items, as costs per capita. The analysis furnished a predictive model of declining per capita costs as population rises. An identical analysis was also made of the Eureka School District with five low-enrollment school districts, using available data of 1979 and 1980. The resulting forecast for



Eureka School District expenditures was used to determine annual cost per student based on the anticipated population influx of the proposed action.

Town of Eureka per capita budgeting was not subjected to regression analysis effects due to the diversity and statistical unreliability that its base population and county financing in comparison with other similar entities presented.

An Elko model was not formulated, because of insufficient numbers of counties or districts larger in size to provide reasonable measures of cost relationships with larger populations. The same problem disallowed further extended analysis of the Elko School District. Expenditure projects for Elko County jurisdictions were therefore calculated by extrapolation of status quo per capita rates, as exhibited by 1980-83 budgets.



CHAPTER 2.0  
BASELINE SOCIOECONOMICS DESCRIPTION

2.1 Introduction

This section presents the characteristics and statistics of the existing regional socioeconomic environment, with emphasis on Eureka County and some reference to the four surrounding counties (Elko, Lander, Nye and White Pine).

2.2 Population

The total resident population of Nevada as of April 1, 1980 was 800,493 (U.S. Bureau of the Census, 1980). This was an increase of approximately 64 percent during the decade of the 1970's, making Nevada the state with the highest growth rate in the U.S. between 1970 and 1980. However, in 1980 the average number of persons per household in Nevada was second lowest in the U.S. at 2.59.

Historically, Nevada has been a sparsely populated state, particularly the central region. Populations within the various counties have fluctuated significantly, primarily in response to mining booms. It was around the mining towns and ranching settlements that the earlier populus first took hold.

Historic population counts for Eureka County and surrounding counties are shown in Table 2-1. Population density for these counties is shown in Table 2-2. White Pine County experienced a population decline between 1970 and 1980, demonstrating the vulnerability of single economy counties to national and international economic fluctuations. Eureka County is located in the sparsely populated region of north central Nevada. Population density equals less than one person per three and one-half square miles (1980), the second lowest county average in the state. Historically, the population of the county has fluctuated significantly. Peak population exceeded 9,000 during the intense mineral mining activity of the 1880's. By the 1920's, diminished mine activity resulted in a decline of county popula-



Mt. Hope Molybdenum Project

Table 2-1 Population of Selected Nevada Counties: 1920-1980

<u>COUNTY</u>	<u>January 1</u> <u>1920</u>	<u>April 1</u> <u>1930</u>	<u>April 1</u> <u>1940</u>	<u>April 1</u> <u>1950</u>	<u>April 1</u> <u>1960</u>	<u>April 1</u> <u>1970</u>	<u>April 1</u> <u>1980</u>
Elko	8,083	9,960	10,912	11,654	12,011	13,958	17,269
Eureka	1,350	1,333	1,361	896	767	948	1,198
Lander	1,484	1,714	1,745	1,850	1,566	2,666	4,076
Nye	6,504	3,989	3,606	3,101	4,374	5,599	9,048
White Pine	8,935	11,771	12,377	9,424	9,808	10,150	8,167
STATE	77,407	91,058	110,247	160,083	285,278	488,738	800,493

Source: U.S. Bureau of the Census, Census of the Population - Nevada: 1920-80.



Mt. Hope Molybdenum Project

Table 2-2 Population Density of Selected Nevada Counties: 1920-1980  
(Persons Per Square Mile)

<u>COUNTY</u>	<u>Total County<sup>1/</sup></u>	<u>1920</u>	<u>1930</u>	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1980</u>
	<u>Area</u>							
Elko	17,181	0.5	0.6	0.6	0.7	0.7	0.8	1.0
Eureka	4,182	0.3	0.3	0.3	0.2	0.2	0.2	0.3
Lander	5,621	0.3	0.3	0.3	0.3	0.3	0.5	0.7
Nye	18,064	0.4	0.2	0.2	0.2	0.2	0.3	0.5
White Pine	8,905	1.0	1.3	1.4	1.1	1.1	1.1	0.9
STATE	110,540	0.7	0.8	1.0	1.5	2.6	4.4	7.2
UNITED STATES	---	35.6	41.2	44.2	50.7	50.3	57.5	64.1

<sup>1/</sup> In square miles.

Source: U.S. Bureau of the Census, Census of the Population - Nevada: 1920-1980 and Nevada Department of Taxation.



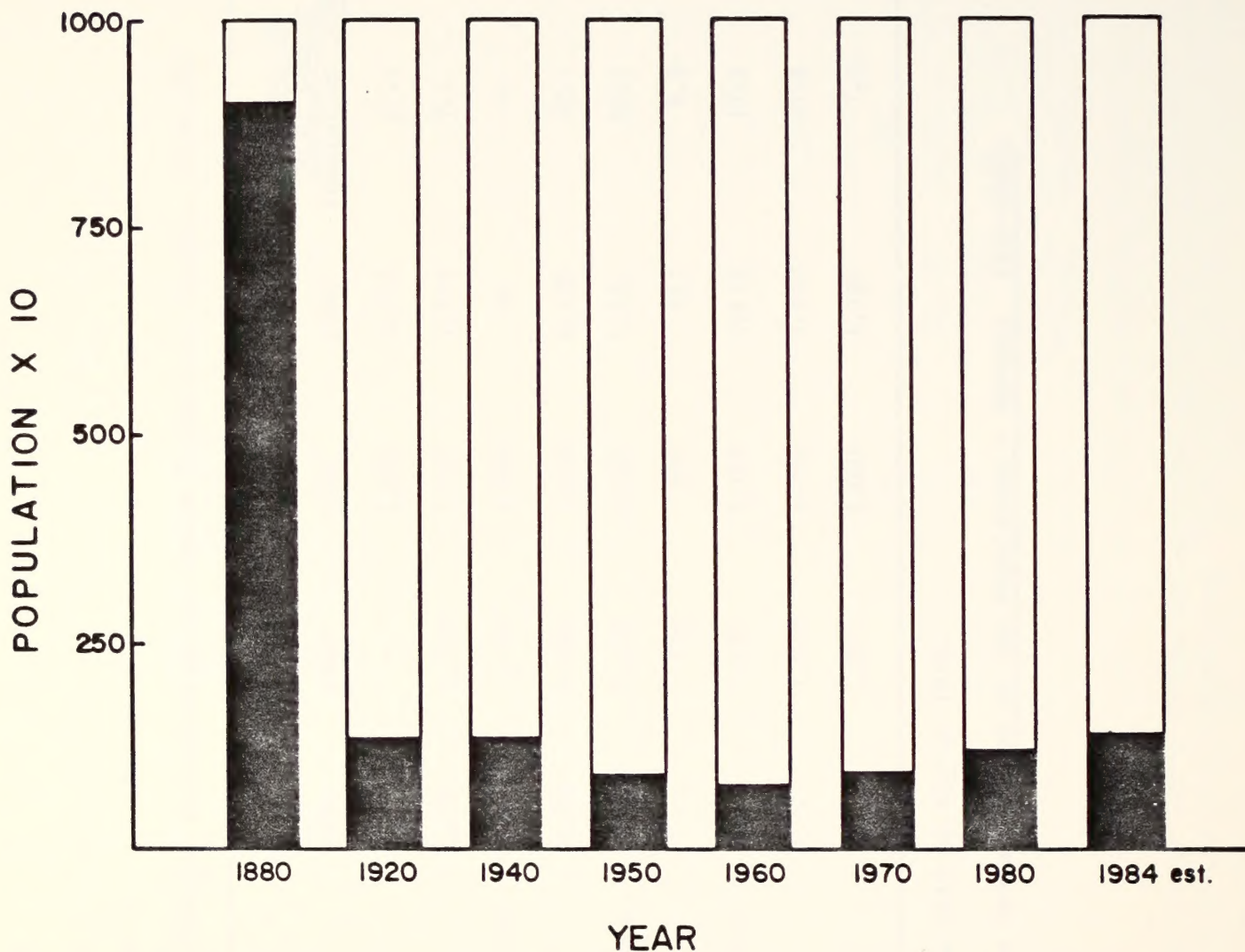
tion to approximately 1,350. Further population declines were recorded from 1940 to 1950 (pop. 767). Since 1960, however, the county population has steadily increased to a 1970 census of 948 and a 1980 census population of 1,198 (Figure 2-1). In 1980, more than half the county population resided in the unincorporated town and county seat of Eureka. The balance of the population resided primarily in the unincorporated towns of Crescent Valley and Beowawe at the north end of the county.

The Town of Eureka is not considered an urban area (population does not exceed 2,500 inhabitants) and is designated by census standards as a rural population. The unincorporated towns of Eureka, Crescent Valley and Beowawe form the nucleus of the population within Eureka County. This trend of population concentration in the incorporated or unincorporated towns is evident throughout many counties (see Table 2-3). The overall trend has been rapid urbanization for the entire state since 1920. In 1950 for the first time, Nevada's urban population was greater than the rural population. This shift in population has continued for many counties (see Table 2-4), resulting in 85.4 percent of the population of Nevada residing in urban areas as of 1980.

On a statewide basis, most of the population growth during 1970 and 1980 was due to net migration. The net migration in Nevada by county for the period 1970-1980 is shown in Table 2-5.

Recent trends in population for Eureka County show an increase of 26.5 percent between 1970 and 1980 and 23.6 percent between 1960 and 1970. These trends reflect increased mining and construction activity as well as the stabilization of local merchant, farming and ranching employment bases. Sporadic mining developments have had similar effects on population trends in the Town of Eureka. Overall population trends can be evaluated further by reviewing each component. During the period 1960 to 1970, net migration equalled 26.1 percent of base population while the natural increase was a negative 2.5 percent. Net migration during the next decade (1970-1980) decreased to approximately 18.9 percent of base population but the natural increase during that period was a positive 7.5 percent of baseline (see Table 2-5).





MT. HOPE MOLYBDENUM PROJECT

**HISTORICAL POPULATION  
OF  
EUREKA COUNTY, NEVADA**

U.S. Department of the Interior  
Bureau of Land Management

FIGURE  
2-1



Mt. Hope Molybdenum Project

Table 2-3 Population of Selected Incorporated and Census Designated Places: 1950-1980

Place	County	1950	1960	1970	1980	Percent of Total County Population (1980)		Percent Change	
								60-70	70-80
Battle Mountain	Lander	-	-	1,856	2,755	67.6	-	-	48.4
Carlin City	Elko	1,203	1,023	1,313	1,232	7.1	28.3	-6.2	-
East Ely <sup>1/</sup>	White Pine	-	1,796	1,992	NA	--	10.9	NA	NA
Elko City	Elko	5,393	6,298	7,621	8,758	50.7	21.0	14.9	14.9
Ely City	White Pine	3,558	4,018	4,176	4,882	59.7	3.9	16.9	16.9
Gabbs City	Nye	-	770	874	811	8.9	13.5	-7.2	-7.2
McGill	White Pine	2,297	2,195	2,164	1,419	17.3	-1.4	-34.4	-34.4
Tonopah	Nye	1,375	1,679	1,716	1,952	21.6	2.2	13.7	13.7
Wells City	Elko	947	1,071	1,081	1,218	7.0	0.9	12.7	12.7

<sup>1/</sup> East Ely annexed by the City of Ely in 1976.

Source: U.S. Bureau of the Census, Census of the Population - Nevada: 1950-1980.



Mt. Hope Molybdenum Project

Table 2-4 Urban and Rural Population of Nevada Counties: 1950, 1960, 1970 and 1980

County	1950 Population		1960 Population		1970 Population		1980 Population	
	Urban	Rural <sup>2/</sup>	Urban	Rural <sup>2/</sup>	Urban	Rural <sup>2/</sup>	Urban	Rural <sup>2/</sup>
Carson City <sup>1/</sup>	3,082	1,090	5,163	2,900	15,468	-	32,022	-
Churchill	-	6,161	2,734	5,718	2,959	7,554	4,262	9,655
Clark	36,045	12,244	106,011	21,005	258,299	14,989	442,464	20,623
Douglas	-	2,029	-	3,481	-	6,882	8,875	10,546
Elko	5,393	6,261	6,298	5,713	7,621	6,337	8,758	8,511
Esmeralda	-	614	-	619	-	629	-	777
Eureka	-	896	-	767	-	948	-	1,198
Humboldt	2,847	1,991	3,453	2,255	3,587	2,788	4,140	5,294
Lander	-	1,850	-	1,566	-	2,666	2,749	1,327
Lincoln	-	3,837	-	2,431	-	2,557	-	3,732
Lyon	-	3,679	-	6,143	-	8,221	-	13,594
Mineral	-	5,560	2,838	3,491	3,539	3,512	3,741	2,476
Nye	-	3,101	-	4,374	-	5,599	-	9,048
Pershing	-	3,103	-	3,199	-	2,670	-	3,408
Storey	-	671	-	568	-	695	-	1,503
Washoe	40,700	9,505	70,189	14,554	99,687	21,381	171,054	22,569
White Pine	3,558	5,866	4,018	5,790	4,176	5,974	4,882	3,285
STATE	91,625	68,458	200,704	84,574	395,336	93,402	682,947	117,546

<sup>1/</sup> In 1969, Carson City and Ormsby County became one municipal government - Carson City, an independent city.

<sup>2/</sup> Urban areas - places of 2,500 or more inhabitants; Rural areas - places with less than 2,500 inhabitants.

Source: U.S. Bureau of the Census, Census of the Population - Nevada: 1950 - 1980.



Mt. Hope Molybdenum Project

Table 2-5 Net Migration in Nevada By County: 1970 - 1980

<u>County or Area</u>	<u>1970-1980</u>		<u>1970-1980 Natural Increase</u> <sup>1/</sup>	<u>Net Migration Number</u>	<u>1970-1980 <sup>2/</sup> Rate (Percent)</u>
	<u>Births</u>	<u>Deaths</u>			
Carson City	3,570	1,845	1,725	14,829	95.9
Churchill	2,114	1,190	924	2,480	23.6
Clark	55,090	24,226	30,864	158,935	58.1
Douglas	1,623	773	850	11,689	169.8
Elko	2,827	1,396	1,431	1,880	13.5
Esmeralda	133	97	36	112	17.8
Eureka	155	84	71	179	18.9
Humboldt	1,357	741	616	2,443	38.3
Lander	747	250	497	913	34.2
Lincoln	575	316	259	916	35.8
Lyon	1,691	993	698	4,675	56.9
Mineral	1,141	621	520	-1,354	-19.2
Nye	934	557	377	3,072	54.9
Pershing	479	391	88	650	24.3
Storey	126	124	2	806	116.0
Washoe	21,654	12,325	9,329	63,226	52.2
White Pine	1,727	888	839	-2,822	-27.8
STATE	95,943	46,817	49,126	262,629	52.6

<sup>1/</sup> Births minus deaths.

<sup>2/</sup> Total 1970-1980 increase less natural increase.

Source: U.S. Bureau of the Census, 1980 Census of Population.



Relative to the estimation of future baseline populations, the prediction of net population trends in an area with a dynamic population history such as Eureka County is very difficult. Literature-based projections of county and town populations are widely variant due to the diverse economic and industrial assumptions applied to the period between 1980 to 2000. Recent projections of Eureka, Elko, Nye and White Pine County populations by the Bureau of Business and Economic Research, University of Nevada at Reno are shown in Table 2-6. For Eureka County, the predictions suggest a population growth of 79 percent for the period between 1980 and the year 2000 (from population 1,198 to 2,145). Assumptions by the UNR Bureau of Business and Economic Research regarding the population growth include increased mining activity, energy development and outdoor recreation activities. Nearly any industrial scale development would create major changes due to the low population base and its sensitivity to fluctuations. Within Eureka County, the Town of Eureka population is projected to increase to approximately 1,330 by the year 2000.

The 1981-1983 national recession has apparently produced a significant downward trend in Eureka population as employment opportunities decreased. Mid-1983 town population has been estimated at 450 to 500, the decrease being largely attributable to area mine closures and lack of jobs (County Commissioner D. Pastorino, personal communication, 1983).

Elko County baseline population and trends are of particular interest due to the potentially affected communities of Carlin and Elko in the event of the Decentralized Workforce alternative (alternative 5-B) of the Mt. Hope Project.

Elko County, adjacent to the northern part of Eureka County, encompasses 17,181 square miles and is the second largest county in Nevada. The communities of Elko and Carlin are in close proximity to Eureka County and are the primary trade and residential centers nearest the junction of State Route 278 (north-south to Eureka) and I-80 (major travel route to Reno-Salt Lake City). Elko County was established in 1869 and has experienced relatively consistent patterns of population and industrial growth. The City of Elko is the county seat and lies on the Humboldt River. Its location along I-80 between Salt Lake City and Reno has contributed substantially to



Mt. Hope Molybdenum Project

Table 2-6 Population Projections for Selected Counties in Nevada

<u>COUNTY</u>	1980 <u>Total</u>	<u>Projected Years</u>			
		<u>1985*</u>	<u>1990*</u>	<u>1995*</u>	<u>2000*</u>
Eureka	1,198	1,451	1,762	1,945	2,145
Elko	17,269	20,313	23,789	26,265	28,962
Nye	9,048	11,330	14,187	15,664	17,294
White Pine	8,167	8,752	12,845	10,235	10,235

\* Source: Bureau of Business and Economic Research/UNR Projections.



its socioeconomic environment. The City of Carlin is located 23 miles southwest of Elko; directly at the junction of State Route 278 from Eureka and I-80. The predominant socioeconomic influences in the City of Carlin include two major railroad operations and proximity to Elko.

Several population centers and associated industries contribute to the general Elko County socioeconomic environment. In 1980, Elko County population totalled 17,269 individuals; Elko City and Carlin populations totalled 9,990 or 57.8 percent of the county population. Bureau of Business and Economic Research projections for county population growth indicate a year 2000 population of 28,962 representing an increase of 67.7 percent. Population density is just less than one person per square mile. Contrary to Eureka County distribution, approximately half the Elko County population resides in an urban area (Eureka County 100 percent rural). The percentage change from 1970-1980 indicates that the growth of rural areas (34.3 percent) is significantly higher than urban area growth (14.9 percent).

## 2.3 Employment and Income

### 2.3.1 Employment

Employment in Nevada increased from the 1975 level of 260,000 to 425,300 in September, 1981 (an increase of 64 percent) as reported by the Nevada Employment Security Department (1981). Unemployment was down from 27,800 (1975) to 15,000 (1981). The high unemployment rate of 9.6 percent for 1975 dropped to 4.5 percent for 1978, but rose to 7.1 percent in 1981, 10.1 percent in 1982 and 11.0 percent in 1983. National unemployment rates varied from 6.0 percent in 1978 to 7.6 percent in 1981, and rose again to reach 9.7 percent in 1982. Unemployment rates for Eureka County, the State of Nevada and the United States are shown in Table 2-7.

The actual number of unemployed individuals during the 1980-82 biennium for Nevada rose from 31,800 to approximately 40,300 (a 26 percent increase). However, there were 20,657 active employers ending fiscal year 1982. Employment in Eureka County varied from a negative 2.63 percent annual average growth (1976-1978) to a dramatic 25.66 percent positive growth rate



Mt. Hope Molybdenum Project

Table 2-7 Percent Unemployment for Selected Years

	1976	1977	1978	1980	1981	1982	1983
Eureka County	5.0	3.8	1.8	5.0	5.1	21.6	12.9
Nevada	9.0	7.0	4.5	6.2	7.1	10.1	11.0
United States	7.7	7.0	6.0	7.1	7.6	9.7	10.6

Sources: Nevada Employment Security Department, Nevada and County Labor Force Summaries, (1976, 1977, 1978, and 1979) and D. Wright, personal communication, 1983, U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System (for years 1980, 1981, 1982).



in 1980-1981. As shown on Table 2-7, unemployment in Eureka County during the period of 1976 to 1983 ranged between a low of 1.8 percent in 1978 to a high of 21.6 percent in 1982. The 1983 unemployment figures for Eureka County equalled 12.9 percent of the labor force. Unemployment figures during the period 1979-1983 for the surrounding counties of Elko, White Pine, Lander and Nye are shown in Table 2-8.

The leading employment sector for Nevada continues to be services, which accounted for over 42 percent of the total employment in 1980. Trade and government follow at 20 percent and 14 percent, respectively. Table 2-9 shows state employment by industry and county for the years 1971 and 1980.

The most important employment sectors on a regional five county basis (Eureka, Lander, Nye, Elko and White Pine counties) in 1980 were, in order of overall contribution: services, mining, government and construction. Eureka and Lander counties however, shared their largest employment sector in mining. Mining accounted for 61 percent and 51 percent (1980); 62.8 percent and 52.5 percent (1981); 66.7 percent and 55.4 percent (1982), of the total county employment, respectively. Employment by major sector for 1981 and 1982 in the five county region is shown in Tables 2-10 through 2-19. A review of employment sector percentages specifically for Eureka County during the period 1967 to 1981 is presented in Table 2-20.

Total employment for Eureka County (as measured by State Unemployment Compensation Law NRS 612 coverage) in 1982 equalled 43 business firms and governmental agencies (a decrease of 7 firms from the previous year). The industries of mining, trade and services employed 390 persons (76.5 percent of total employment) and were distributed among 32 firms. Total federal, state and local government employment equalled 90 individuals in eight agencies. Total county payroll in 1982 (NRS 612) equalled \$11,168,137.



Mt. Hope Molybdenum Project

Table 2-8 Unemployment Rate (Percent) for Selected Nevada Counties

County	1979 <u>1/</u>	1980 <u>1/</u>	1981 <u>1/</u>	1982 <u>1/</u>	1983 <u>2/</u>
Elko	4.2	4.6	4.9	11.1	8.9
Nye	2.9	2.7	4.1	3.2	8.7 <u>3/</u>
White Pine	10.3	6.2	6.8	20.1	22.1
Eureka	2.1	4.6	4.7	21.6	12.9
Lander	4.2	4.4	4.8	10.5	14.5

1/ NRS 612 employment - individuals who are covered under the State's Unemployment Compensation Law NRS 612.

2/ Discrepancy between total estimated employment and NRS 612 employment represents individuals not covered by state unemployment compensation arrangements (self employed).

3/ Does not include Air Force Base employment or Clark County residents who are employed in Nye County.

Sources: State of Nevada Office of Community Services, Eureka, Nye, White Pine, Elko and Lander County Nevada Profiles, 1982, 1983 and K. Sceirine, personal communications, 1984, Nevada Security Department.



Mt. Hope Molybdenum Project

Table 2-9 Nevada Employment by Industry by County 1/  
1971 and 1980 (annual averages)

County	Mining		Construction		Manufacturing		Transportation & Public Utilities		Total Trade	
	1971	1980	1971	1980	1971	1980	1971	1980	1971	1980
Carson City	30	30	400	1,160	290	1,730	230	570	980	2,410
Churchill	b	100	120	210	110	180	60	100	520	820
Clark	100	500	7,500	13,800	4,000	6,800	7,500	13,100	21,300	45,300
Douglas	10	30	170	750	270	950	170	370	380	960
Elko	80	460	270	650	50	180	650	720	1,130	1,590
Esmeralda	100	110	30	40	0	0	0	b	20	20
Eureka	210	350	b	40	0	0	30	20	10	60
Humboldt	60	160	110	820	60	190	160	260	590	1,030
Lander	450	990	10	70	0	b	40	40	180	360
Lincoln	30	310	10	50	b	10	80	80	120	240
Lyon	650	150	110	210	220	460	100	90	380	480
Mineral	40	140	30	120	b	20	50	40	240	250
Nye	320	1,050	110	370	10	80	90	140	250	400
Pershing	140	230	20	20	b	80	70	60	210	240
Storey	60	290	10	b	b	b	50	60	90	200
Washoe	300	1,000	4,100	7,300	3,200	8,300	4,700	8,200	13,200	24,700
White Pine	1,090	340	140	240	390	340	170	250	740	680
STATE <sup>1/</sup>	3,600	6,300	13,100	25,800	8,600	19,400	14,200	24,100	40,400	79,700



Mt. Hope Molybdenum Project

Table 2-9 Nevada Employment by Industry by County 1/  
1971 and 1980 (annual averages) (continued)

County	Finance, Insurance and Real Estate		Total Service		Total Government		Total All Industries	
	1971	1980	1971	1980	1971	1980	1971	1980
Carson City	160	390	1,080	3,270	3,570	6,010	6,740	15,570
Churchill	90	100	450	760	980	1,340	2,330	3,600
Clark	4,800	10,200	47,500	105,000	16,500	26,100	109,300	220,700
Douglas	170	370	5,670	11,280	380	750	7,230	15,460
Elko	210	230	1,480	2,720	1,290	1,570	5,170	8,120
Esmeralda	0	0	b	b	60	100	210	270
Eureka	b	b	10	10	80	80	360	570
Humboldt	40	100	510	660	540	740	2,070	3,960
Lander	20	20	50	100	210	360	970	1,950
Lincoln	b	30	80	240	280	360	620	1,310
Lyon	20	90	140	390	500	630	2,110	2,480
Mineral	20	30	330	640	1,720	1,110	2,430	2,330
Nye	20	270	4,820	3,810	480	610	6,100	6,740
Pershing	20	20	110	80	220	250	780	960
Storey	10	10	30	60	50	80	310	710
Washoe	3,400	6,100	21,000	42,800	10,400	16,300	60,300	114,700
White Pine	50	80	360	540	740	800	3,660	3,280
STATE 1/	9,000	17,800	83,600	169,300	38,100	57,200	210,600	399,600

1/ County totals may not equal State totals due to rounding.

2/ Less than 10.

Source: Nevada Employment Security Department, County Labor Force Summaries.



Mt. Hope Molybdenum Project

Table 2-10 1981 Employment by Major Economic Sector Eureka County 1/

Sector	1981 Employment	Employment Percent (618 Total) <sup>5/</sup>	Payroll \$000	Number of Firms
Mining	388	62.8	8,662	11
Government <u>2/</u>	102	16.5	1,206	7
Agriculture	NA	NA	NA	NA
Services	50	8.1	424	10
Trade	41	6.6	NA	15
Construction	30	4.9	NA	5
T.P.U.C. <u>3/</u>	<10	<1	20	<3
F.I.R.E. <u>4/</u>	<u>&lt;10</u>	<u>&lt;1</u>	<u>70</u>	<u>&lt;3</u>
	+ 611	+ 98.9	+ 10,382	+ 50

1/ Covered employment by industry and payroll refers to those industries whose employees are covered under the State's Unemployment Compensation Law NRS 612.

2/ Number of Departments, Agencies - Federal, State, local.

3/ T.P.U.C. Transportation, Communication, Utility Industries

4/ F.I.R.E. Finance, Insurance, Real Estate Industries

5/ Employment Percentage based on NRS 612 covered Employment of 618 persons.

Source: State of Nevada Office of Community Services, Eureka County  
Nevada Profile, 1982.



Mt. Hope Molybdenum Project

Table 2-11 1982 Employment by Major Economic Sector Eureka County 1/

Sector	1982 Employment	Employment Percent (510 Total) <sup>5/</sup>	Payroll \$000	Number of Firms
Mining	340	66.7	8,625	11
Government <u>2/</u>	90	17.6	1,543	8
Agriculture	NA	NA	NA	NA
Services	20	3.9	544	12
Trade	30	5.9	0	9
Construction	<10	<1	0	3
T.P.U.C. <u>3/</u>	20	3.9	0	0
F.I.R.E. <u>4/</u>	0	0	86	0
Manufacturing	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
	+500	+98	10,798	+43

1/ Covered employment by industry and payroll refers to those industries whose employees are covered under the State's Unemployment Compensation Law NRS 612.

2/ Number of Departments, Agencies - Federal, State, local.

3/ T.P.U.C. Transportation, Communication, Utility Industries

4/ F.I.R.E. Finance, Insurance, Real Estate Industries

5/ Employment Percentage based on NRS 612 covered Employment of 510 persons.

Source: State of Nevada Office of Community Services, Eureka County  
Nevada Profile, 1983.



Mt. Hope Molybdenum Project

Table 2-12 1981 Employment by Major Economic Sector Elko County 1/

Sector	1982 Employment	Employment Percent (8,961 Total) <sup>5/</sup>	Payroll \$000	Number of Firms
Mining	742	8.3	17,052	54
Government <u>2/</u>	1,769	19.7	26,943	34
Agriculture	NA	NA	NA	NA
Services	3,335	37.2	36,766	186
Trade	1,592	17.8	16,650	184
Construction	634	7.1	12,495	98
T.P.U.C. <u>3/</u>	455	5.1	7,786	31
F.I.R.E. <u>4/</u>	245	2.7	3,582	50
Manufacturing	<u>191</u>	<u>2.1</u>	<u>2,528</u>	<u>12</u>
	+8,963	+100	+123,802	+649

1/ Covered employment by industry and payroll refers to those industries whose employees are covered under the State's Unemployment Compensation Law NRS 612.

2/ Number of Departments, Agencies - Federal, State, local.

3/ T.P.U.C. Transportation, Communication, Utility Industries

4/ F.I.R.E. Finance, Insurance, Real Estate Industries

5/ Employment Percentage based on NRS 612 covered Employment of 8,961 persons.

Source: State of Nevada Office of Community Services, Elko County Nevada Profile, 1982.



Mt. Hope Molybdenum Project

Table 2-13 1982 Employment by Major Economic Sector Elko County 1/

Sector	1982 Employment	Employment Percent (9,120 Total) <sup>5/</sup>	Payroll \$000	Number of Firms
Mining	810	8.9	19,946	50
Government <u>2/</u>	1,610	17.7	29,034	34
Agriculture	NA	NA	NA	NA
Services	3,500	38.4	42,131	185
Trade	1,520	16.7	16,874	189
Construction	490	5.4	9,633	91
T.P.U.C. <u>3/</u>	790	8.7	8,553	32
F.I.R.E. <u>4/</u>	230	2.5	3,640	45
Manufacturing	<u>170</u>	<u>1.9</u>	<u>2,725</u>	<u>12</u>
	+9,120	+100.2	+132,536	+638

1/ Covered employment by industry and payroll refers to those industries whose employees are covered under the State's Unemployment Compensation Law NRS 612.

2/ Number of Departments, Agencies - Federal, State, local.

3/ T.P.U.C. Transportation, Communication, Utility Industries

4/ F.I.R.E. Finance, Insurance, Real Estate Industries

5/ Employment Percentage based on NRS 612 covered Employment of 9,120 persons.

Source: State of Nevada Office of Community Services, Elko County  
Nevada Profile, 1983.



Mt. Hope Molybdenum Project

Table 2-14 1981 Employment by Major Economic Sector Lander County 1/

Sector	1981 Employment	Employment Percent (2,195 Total) <sup>5/</sup>	Payroll \$000	Number of Firms
Mining	1,153	52.5	26,205	30
Government <u>2/</u>	384	17.5	5,652	11
Agriculture	N/A	N/A	N/A	N/A
Services	153	7.0	1,449	21
Trade	419	19.1	3,208	42
Construction	28	1.3	-0-	7
T.P.U.C. <u>3/</u>	25	1.1	549	6
F.I.R.E. <u>4/</u>	24	1.1	374	4
Manufacturing	<u>-0-</u>	<u>-0-</u>	<u>146</u>	<u>&lt;3</u>
	+2,186	+99.6	+37,583	+121

1/ Covered employment by industry and payroll refers to those industries whose employees are covered under the State's Unemployment Compensation Law NRS 612.

2/ Number of Departments, Agencies - Federal, State, local.

3/ T.P.U.C. Transportation, Communication, Utility Industries

4/ F.I.R.E. Finance, Insurance, Real Estate Industries

5/ Employment Percentage based on NRS 612 covered Employment of 2,195 persons.

Source: State of Nevada Office of Community Services, Lander County Nevada Profile, 1982.



Mt. Hope Molybdenum Project

Table 2-15 1982 Employment by Major Economic Sector Lander County 1/

Sector	1982 Employment	Employment Percent (1,840 Total) <sup>5/</sup>	Payroll \$000	Number of Firms
Mining	1,020	55.4	25,544	26
Government <u>2/</u>	340	18.5	5,531	12
Agriculture	N/A	N/A	N/A	N/A
Services	80	4.3	981	22
Trade	320	17.4	3,060	40
Construction	-0-	-0-	-0-	7
T.P.U.C. <u>3/</u>	40	2.2	547	6
F.I.R.E. <u>4/</u>	20	1.1	365	4
Manufacturing	<u>-0-</u>	<u>-0-</u>	<u>119</u>	<u>-0-</u>
	+1,820	+98.9	+36,147	+117

1/ Covered employment by industry and payroll refers to those industries whose employees are covered under the State's Unemployment Compensation Law NRS 612.

2/ Number of Departments, Agencies - Federal, State, local.

3/ T.P.U.C. Transportation, Communication, Utility Industries

4/ F.I.R.E. Finance, Insurance, Real Estate Industries

5/ Employment Percentage based on NRS 612 covered Employment of 1,840 persons.

Source: State of Nevada Office of Community Services, Lander County Nevada Profile, 1983.



Mt. Hope Molybdenum Project

Table 2-16 1981 Employment by Major Economic Sector Nye County 1/

Sector	1981 Employment	Employment Percent (7,909 Total) <sup>5/</sup>	Payroll \$000	Number of Firms
Mining	1,340	16.9	34,862	31
Government <u>2/</u>	665	8.4	10,109	22
Agriculture	N/A	N/A	N/A	N/A
Services	4,024	50.8	118,738	63
Trade	495	6.3	4,331	103
Construction	421	5.3	11,305	46
T.P.U.C. <u>3/</u>	152	1.9	3,255	15
F.I.R.E. <u>4/</u>	319	4.0	5,513	15
Manufacturing	<u>92</u>	<u>1.2</u>	<u>1,661</u>	<u>9</u>
	+7,508	+94.8	+189,774	+304

1/ Covered employment by industry and payroll refers to those industries whose employees are covered under the State's Unemployment Compensation Law NRS 612.

2/ Number of Departments, Agencies - Federal, State, local.

3/ T.P.U.C. Transportation, Communication, Utility Industries

4/ F.I.R.E. Finance, Insurance, Real Estate Industries

5/ Employment Percentage based on NRS 612 covered Employment of 7,909 persons.

Source: State of Nevada Office of Community Services, Nye County  
Nevada Profile, 1982.



Mt. Hope Molybdenum Project

Table 2-17 1982 Employment by Major Economic Sector Nye County 1/

Sector	1982 Employment	Employment Percent (8,640 Total) <sup>5/</sup>	Payroll \$000	Number of Firms
Mining	1,430	16.6	39,833	32
Government <u>2/</u>	670	7.8	11,369	23
Agriculture	N/A	N/A	N/A	N/A
Services	5,470	63.3	154,252	65
Trade	480	5.6	4,893	99
Construction	160	1.9	3,181	47
T.P.U.C. <u>3/</u>	160	1.9	3,611	15
F.I.R.E. <u>4/</u>	170	2.0	3,025	16
Manufacturing	<u>90</u>	<u>1.0</u>	<u>1,935</u>	<u>7</u>
	+8,630	+100.1	+222,099	+304

1/ Covered employment by industry and payroll refers to those industries whose employees are covered under the State's Unemployment Compensation Law NRS 612.

2/ Number of Departments, Agencies - Federal, State, local.

3/ T.P.U.C. Transportation, Communication, Utility Industries

4/ F.I.R.E. Finance, Insurance, Real Estate Industries

5/ Employment Percentage based on NRS 612 covered Employment of 8,640 persons.

Source: State of Nevada Office of Community Services, Nye County  
Nevada Profile, 1983.



Mt. Hope Molybdenum Project

Table 2-18 1981 Employment by Major Economic Sector White Pine County 1/

Sector	1981 Employment	Employment Percent (3,494 Total) <sup>5/</sup>	Payroll \$000	Number of Firms
Mining	541	15.5	10,142	25
Government <u>2/</u>	797	22.8	11,461	22
Agriculture	N/A	N/A	N/A	N/A
Services	616	17.6	5,838	72
Trade	748	21.4	6,554	101
Construction	175	5.0	3,246	32
T.P.U.C. <u>3/</u>	151	4.3	2,695	16
F.I.R.E. <u>4/</u>	98	2.8	1,114	16
Manufacturing	<u>368</u>	<u>10.5</u>	<u>9,679</u>	<u>3</u>
	+3,494	+99.9	+50,729	+287

1/ Covered employment by industry and payroll refers to those industries whose employees are covered under the State's Unemployment Compensation Law NRS 612.

2/ Number of Departments, Agencies - Federal, State, local.

3/ T.P.U.C. Transportation, Communication, Utility Industries

4/ F.I.R.E. Finance, Insurance, Real Estate Industries

5/ Employment Percentage based on NRS 612 covered Employment of 3,494 persons.

Source: State of Nevada Office of Community Services, White Pine County Nevada Profile, 1982.



Mt. Hope Molybdenum Project

Table 2-19 1982 Employment by Major Economic Sector White Pine County 1/

Sector	1982 Employment	Employment Percent (3,040 Total) <sup>5/</sup>	Payroll \$000	Number of Firms
Mining	360	11.8	9,148	22
Government <u>2/</u>	760	25.0	10,945	22
Agriculture	N/A	N/A	N/A	N/A
Services	570	18.8	6,067	68
Trade	660	21.7	5,943	96
Construction	100	3.3	1,585	29
T.P.U.C. <u>3/</u>	200	6.6	2,157	17
F.I.R.E. <u>4/</u>	80	2.6	1,115	15
Manufacturing	<u>320</u>	<u>10.5</u>	<u>8,195</u>	<u>3</u>
	+3,050	+100.3	+45,155	+272

1/ Covered employment by industry and payroll refers to those industries whose employees are covered under the State's Unemployment Compensation Law NRS 612.

2/ Number of Departments, Agencies - Federal, State, local.

3/ T.P.U.C. Transportation, Communication, Utility Industries

4/ F.I.R.E. Finance, Insurance, Real Estate Industries

5/ Employment Percentage based on NRS 612 covered Employment of 3,040 persons.

Source: State of Nevada Office of Community Services, White Pine County Nevada Profile, 1983.



Mt. Hope Molybdenum Project

Table 2-20 Employment Sector and Percent Share - Annual Review, Eureka County

Employment Sector	1967 %	1977 %	1981 %
Mining	36.2	43.7	55.0
Government	16.9	21.8	14.5
Agriculture	22.3	20.2	12.3
Services	D	D	7.1
Manufacturing	0.0	D	5.8
Construction	<u>D</u>	<u>&lt;1.6</u>	<u>4.3</u>
	75%	87.3%	99%

D - Data not disclosed

Source: Nevada State Employment Security Department, Nevada County  
Labor Force Summaries, Nevada Statistical Abstract, 1981.



Total employment for Elko County (NRS 612) in 1982 equalled 638 business and governmental agencies (a decrease of 11 firms from the previous year). The industries of services, trade and mining employed 5,830 persons (64 percent of total employment) and were distributed among 424 firms. Total federal, state and local government employment equalled 1,610 in 34 agencies. Total county payroll in 1982 (NRS 612) equalled \$132,536,622.

### 2.3.2 Income

The per capita personal income for Nevada increased by 122 percent between 1970 and 1979, as compared to the national figure of 118 percent. In 1982, the per capita personal income for Nevada (Table 2-21) was \$11,784 (est.), slightly higher than the national figure of \$11,056 (est.).

Wage and salary disbursements in Nevada totalled \$6.5 billion in 1981, making up 88 percent of total labor and proprietor's income in 1981. The strongest sector was services, which totalled \$1.8 billion or 29 percent of the total personal income in 1981.

Personal income data for all Nevada counties is shown in Table 2-22 for selected years 1959-1979. Estimated weekly and hourly earnings for selected Nevada industries during the period 1970-1980 are shown in Table 2-23.

Total personal income for Eureka County was \$11.5 million in 1981 (reported for industries covered under the State's Unemployment Compensation Law NRS 612) and \$11.1 million in 1982 (down 3.6 percent). Gross average annual earnings in 1980 equalled \$15,369 and increased 21.2 percent in 1981 to \$18,620 (U.S. Dept. of Commerce revision expected for 1981). The increase in annual earnings from 1980 to 1981 reflected the increase in employment during that period. From 1979-1981, the gross annual earnings increased 23 percent.

Per capita income for Eureka County between 1977 and 1981 increased 97.0 percent from \$5,275 to \$10,390 (1983 dollars). Eureka County per capita income in 1977 was 32 percent lower than the Nevada State average of \$7,808 and 24.5 percent lower than the national average. Recent events have,



Mt. Hope Molybdenum Project

Table 2-21 Estimated Per Capita Personal Income

	1977	1978	1979	1980	1981	1982
Eureka County	\$5,275	\$8,298	\$9,897	\$10,356	\$10,390	\$ N/A
Nevada	7,808	8,878	9,789	10,674	11,582	11,784
United States	6,984	7,776	8,657	9,483	10,495	11,056

N/A - Not available at time of printing.

Source: T. Cartwright, 1983, Personal Communication, U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System.



Mt. Hope Molybdenum Project

Table 2-22 Per Capita Personal Income by County: Selected Years 1959 - 1979  
(Adjusted to 1967 Dollars)

County	1959 <sup>1</sup> /		1962 <sup>1</sup> /		1966 <sup>1</sup> /		1969		1970	
	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted
Carson City	\$ 2,742	\$ 2,433	\$ 3,249	\$ 2,944	\$ 3,041	\$ 2,956	\$ 3,660	\$ 4,019	\$ 3,987	\$ 4,637
Churchill	2,192	1,944	2,288	2,073	2,479	2,410	2,757	3,027	3,031	3,525
Clark	3,139	2,784	4,298	3,849	3,276	3,184	3,901	4,283	3,922	4,561
Douglas	7,014	6,221	7,802	7,069	6,241	6,066	4,715	5,177	4,761	5,537
Elko	2,886	2,560	3,055	2,768	3,284	3,192	3,800	4,172	3,640	4,233
Esmeralda	3,073	2,726	2,445	2,215	3,020	2,935	2,670	2,932	2,647	3,079
Eureka	3,267	2,898	3,581	3,244	3,571	3,471	4,425	4,859	3,971	4,618
Humboldt	2,701	2,396	3,305	2,994	2,865	2,785	3,282	3,604	3,227	3,753
Lander	2,657	2,357	2,631	2,384	3,365	3,271	3,384	3,716	3,315	3,855
Lincoln	2,291	2,032	2,231	2,021	2,776	2,698	2,409	2,645	2,414	2,807
Lyon	2,625	2,328	2,833	2,567	2,864	2,784	3,000	3,294	3,191	3,711
Mineral	1,251	1,110	1,519	1,376	2,792	2,714	3,226	3,542	2,922	3,398
Nye	3,338	2,961	3,237	2,933	4,332	4,211	3,874	4,254	3,154	3,668
Pershing	2,398	2,127	3,276	2,968	3,037	2,952	3,728	4,093	3,645	4,239
Storey	2,923	2,593	3,925	3,556	3,139	3,051	3,511	3,855	3,802	4,422
Washoe	3,411	3,026	3,736	3,385	3,820	3,713	4,223	4,637	4,293	4,993
White Pine	3,109	2,758	3,373	3,042	2,651	2,577	2,986	3,279	3,078	3,580
STATE	3,144	2,745	3,481	3,154	3,598	3,497	3,865	4,244	3,923	4,563



Mt. Hope Molybdenum Project

Table 2-22 Per Capita Personal Income by County: Selected Years 1959 - 1979  
(Adjusted to 1967 Dollars) (continued)

County	1973		1975		1978		1979	
	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted
Carson City	\$ 3,974	\$ 5,290	\$ 3,733	\$ 6,018	\$ 4,454	\$ 8,703	\$ 4,428	\$ 9,626
Churchill	3,265	4,346	3,340	5,326	3,863	7,549	3,626	7,883
Clark	4,190	5,577	4,066	6,554	4,724	9,231	4,680	10,175
Douglas	5,173	6,885	4,770	7,689	5,649	11,038	5,343	11,615
Elko	4,509	6,002	3,715	5,988	4,493	8,779	4,691	10,198
Esmeralda	2,328	3,098	3,040	4,901	2,980	5,823	2,839	6,171
Eureka	5,506	7,328	2,661	4,289	5,058	8,298	5,792	9,897
Humboldt	3,737	4,974	3,557	5,734	3,864	7,551	3,990	8,675
Lander	3,998	5,322	3,573	5,760	3,866	7,554	4,208	9,149
Lincoln	2,851	3,795	2,844	4,584	3,103	6,063	2,938	6,388
Lyon	3,140	4,180	3,424	5,519	3,909	7,638	3,817	8,298
Mineral	3,642	4,847	3,411	5,499	3,855	7,533	3,691	8,024
Nye	2,938	3,911	3,147	5,073	3,504	6,847	3,538	7,691
Pershing	4,706	6,264	4,125	6,650	3,995	7,807	4,163	9,051
Storey	4,233	5,634	3,087	4,976	3,219	6,289	3,107	6,755
Washoe	4,803	6,393	4,630	7,464	5,679	11,097	5,666	12,317
White Pine	3,552	4,728	3,337	5,380	3,522	6,882	3,523	7,658
STATE <sup>2/</sup>	4,292	5,712	4,227	6,636	4,865	8,878	4,830	9,789

1/ Per capita income estimates developed using population estimates from Bureau of Business and Economic Research, University of Nevada, Reno.

2/ Eureka County and State figures for years 1978 and 1979 are based on more current data received from the U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, 1983.



## Mt. Hope Molybdenum Project

Table 2-23 Estimated Average Weekly Earnings, Average Hourly Earnings, and Average Hours for Selected Nevada Industries: 1970 - 1980 (Annual Averages)

Category & Industry	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
						<u>Average Weekly Earnings (\$)</u>					
						212.53	233.26	253.53			
Mining	165.07	183.25	190.34						318.11	356.27	377.88
Construction	257.36	274.91	281.40	297.58	315.78	344.08	368.32	401.74	419.32	465.48	494.56
Manufacturing	160.78	167.51	174.94	178.96	189.71	200.97	210.96	245.01	251.79	267.58	294.99
Communication & Util.	157.98	170.96	182.76	196.41	213.01	238.36	255.52	295.30	308.32	322.09	348.80
Trade	120.20	130.16	138.13	145.27	150.42	166.65	173.35	187.03	199.76	208.01	227.88
						<u>Average Hourly Earnings (\$)</u>					
						5.07	5.61	6.38			
Mining	4.07	4.38	4.89						7.74	8.19	9.40
Construction	7.12	7.62	7.97	8.42	9.07	9.85	10.47	11.43	11.91	12.93	14.00
Manufacturing	4.09	4.21	4.40	4.58	4.88	5.26	5.47	6.09	6.54	6.95	7.77
Communication & Util.	4.02	4.33	4.65	4.90	5.34	5.91	6.34	7.20	7.52	7.78	8.55
Trade	3.24	3.55	3.78	4.03	4.19	4.60	4.88	5.26	5.79	6.10	6.77
						<u>Average Weekly Hours</u>					
						41.9	41.6	39.7			
Mining	40.6	41.9	41.0						41.1	43.5	40.0
Construction	36.1	36.0	35.5	35.3	34.8	34.9	35.2	35.0	35.2	36.0	35.0
Manufacturing	39.3	39.6	39.8	39.0	38.7	38.2	38.4	38.8	38.5	38.5	38.0
Communication & Util.	39.3	39.4	39.3	40.0	39.9	40.3	40.2	39.8	41.0	41.4	40.0
Trade	37.0	36.6	36.5	36.0	35.8	36.1	35.4	35.5	34.5	34.1	33.0

Source: Nevada Employment Security Department, Federal Reports.



however, reversed to some extent the historical trend such that the 1979 per capita income of \$9,897 was the fifth highest in the state, was slightly higher than the state average and 14.3 percent higher than the national average (see Tables 2-21 and 2-22).

The percentage of families with incomes under poverty level in Eureka County, as based on a range of poverty income cut-offs adjusted by factors such as family size, gender of family head, number of children under 18 years, and farm/nonfarm residents equalled 10.4 percent in 1970. Census data for 1980 indicated that 27 percent of the Eureka County population (325 individuals) had annual incomes below designated poverty levels and that 61 of 302 families in the county (20.2 percent) had family incomes of less than \$5,000.

Total personal income for Elko County was \$123.8 million in 1981 (NRS 612) and \$132.5 million in 1982 (7 percent increase). Gross average annual earnings in 1980 equalled \$12,426 and increased 11.2 percent in 1981 to \$13,816. The increase from 1979 to 1981 was 27 percent.

Per capita income for Elko County between 1978 and 1980 increased 29 percent from \$8,247 to \$10,640. Median family income for the county during the period 1970-1980 increased 164 percent (\$9,900 - 1970; \$26,100 - 1980).

Total personal income for Nye County was \$189.8 million in 1981 (NRS 612) and \$222.3 million in 1982 (17 percent increase). Gross average annual earnings in 1980 equalled \$20,902 and increased 14.8 percent in 1981 to \$23,995. The increase in gross annual earnings from 1979-1981 was 30 percent.

Per capita income for Nye County between 1978 and 1980 increased 18 percent from \$7,008 to \$8,262. Median family income for the county during the period 1970-1980 increased 102 percent (\$10,200 - 1970; \$20,600 - 1980).

Total personal income for White Pine County was \$50.7 million in 1981 (NRS 612) and \$45.2 million in 1982 (down 10.8 percent). Gross average annual earnings in 1980 equalled \$13,426 and increased 8.1 percent in 1981 to



\$14,519. The increase in gross annual earnings from 1979-1981 was 28 percent.

Per capita income for White Pine County between 1978 and 1980 increased 34 percent from \$6,886 to \$9,259. Median family income for the county during the period 1970-1980 increased 105 percent (\$9,100 - 1970; \$18,700 - 1980).

The Eureka County economy is expected to continue as it has with sporadic fluctuations in the economic sectors of mining and government. Most future growth is anticipated to follow historical trends in response to mining and oil/gas developments. Although the renovation of the Town of Eureka and effective game management programs are expected to enhance the tourist and hunting service industries, significant population and industry growth will only be recognized as county and area mining/energy projects develop. The uncertainty in the economy since 1980 resulted in negative development throughout the region and has affected the Eureka County economy in a significant manner. The 1982-1990 period is projected, however, to potentially involve multiple industrial project developments, including the initiation and/or reopening of several mining operations.

The development of almost any project within the county or proximate region would affect the county's baseline economy. Substantial project development in adjacent counties which exceeds that within Eureka County might be expected to result in a net out-migration of population due to difficult commuter conditions (e.g., mountain passes and a 90 mile distance to the proposed Ely-White Pine Power Plant project). Most proposed regional projects (e.g., White Pine Power Plant) are expected to require significant in-migration to support labor force requirements. Therefore, multiple project development in the region could be expected to significantly affect current demographic patterns and the economic conditions. Project developments within Eureka County may also affect demographics. A majority of the potential projects identified to date propose locations near the county borders which could result in an intracounty migration from the Town of Eureka to other locations.

In general, regional economic developments are expected to create higher employment, increased personal and per capita income and the need for



more support services and facilities. However, Eureka County will likely continue to experience variable economic conditions as development proceeds, subject to the particular schedules and siting of future industrial and mining activities.

## 2.4 Selected Regional Economic Activities

### 2.4.1 Mining/Mineral Exploration

The mining industry has traditionally been a prime motivator in Nevada's economic, social and political history. The direct impacts of mining in the private sector are usually overshadowed by the gaming and tourist oriented economies of Reno/Sparks and Las Vegas. However, mining plays an extremely important role in contributing to local economies outside of the metropolitan gaming areas. The Bureau of Business and Economic Research, UNR (1982) has reported that:

"outside of the State's major metropolitan areas, over the 13-year period since 1969, mineral, gas and oil exploration, development and production accounted for 73 percent of county payrolls (58 percent of employment) in Esmeralda County, 82 percent of county payrolls (78 percent of employment) in Eureka County, 72 percent of county payrolls (58 percent of employment) in Lander County, 30 percent of county payrolls (23 percent of employment) in Lincoln County, 37 percent of county payrolls (25 percent of employment) in Pershing County, 40 percent of county payrolls (36 percent of employment) in Storey County, and 37 percent of county payrolls (28 percent of employment) in White Pine County."

The estimated value of Nevada's mineral production for 1982 was in excess of \$495 million (based on preliminary nonfuel estimates by the U.S. Bureau of Mines and an estimated price of \$30/bbl for oil). Nevada ranked 14th among the states in nonfuel mineral production. Table 2-24 shows the value of nonfuel production by county for the period 1978-1980. Nevada is the major producer of barite, gold, magnesite and mercury in the U.S.



Mt. Hope Molybdenum Project

Table 2-24 Value of Nonfuel Production in Nevada, by County  
(Thousands)

County	1978	1979	1980	1981 1/	Minerals produced in 1979, in order of value
Carson City	\$252	W	\$409		Stone, sand and gravel
Churchill	W	\$ 1903	W		Diatomite, sand and gravel, salt, gold, silver, tungsten, copper, lead, zinc
Clark	38,199	36,779	37,178		Sand and gravel, lime, gypsum, stone, silver, copper, gold, tungsten
Douglas	W	1488	W		Sand and gravel, silver, gold, stone
Elko	W	6427	17,098		Barite, copper, gold, silver, sand and gravel, tungsten, stone
Esmeralda	15,836	17,917	21,591		Lithium, diatomite, silver, gold, clays taic, tungsten
Eureka	30,674	40,864	W		Gold, iron ore, silver, stone, barite, sand and gravel, lead, mercury, copper zinc
Humboldt	4075	8526	12,089		Mercury, stone, sand and gravel, clays
Lander	30,423	49,082	87,335		Gold, barite, copper, silver, sand and gravel
Lincoln	8969	12,131	13,282		Tungsten, gold, lime, silver, sand and gravel, perlite, clays
Lyon	37,538	25,254	27,695		Cement, stone, sand and gravel, gypsum, diatomite, silver
Mineral	W	40	6468		Silver, gold, tungsten, sand and gravel
Nye	20,259	22,492	45,566		Gold, barite, magnesite, clays, sand and gravel, silver, fluorspar, stone
Pershing	14,295	17,731	18,495		Diatomite, gypsum, iron ore, sand and gravel, stone, perlite, gold, silver, clays
Storey	7924	12,389	21,043		Silver, gold, diatomite, sand and gravel
Washoe	W	4659	2793		Sand and gravel, stone, clays, silver, gold
White Pine	W	W	W		Sand and gravel, tungsten, stone
Undistributed 2/	28,965	2567	83,186		
Total 3/	\$237,408	\$260,249	\$394,230		

W Withheld to avoid disclosing company proprietary data; included with "Undistributed."

1/ Not available.

2/ Includes some sand and gravel (1980) that cannot be assigned to specific counties, gemstones, and values indicated by symbol W.

3/ Data may not add to totals shown because of independent rounding.



More exploration is underway in Nevada than in many other states. The U.S. Bureau of Land Management reported that more claims were recorded in Nevada in 1982 than in any other western state (total claims filed in Nevada equalled 263,997).

A total of 820 federal geothermal leases were in effect by fiscal year 1982 (42.4 percent increase) in Nevada, accounting for a 15.3 percent increase in total lease acreage (1,353,458 ac.).

Oil and gas exploration was down approximately 35 percent in 1982. Only 12 wells were drilled totalling 103,260 feet. However, a 10 percent increase in federal oil and gas leases took place for fiscal year 1982 (total leases = 11,135). The total lease acreage increased 16.8 percent. The State of Nevada received a total revenue of \$12.6 million from the mineral industry. Mining is usually a major part of the tax base for most of the rural counties of Nevada. The mining industry paid an estimated \$26 million to State and local governments in taxes. For specific counties this contribution to the public sector is quite substantial. The Bureau of Business and Economic Research, UNR (1982) reported that in 1981 and 1982:

"mining's share of assessed values was 18 percent in Elko County, 49 percent in Esmeralda County, 76 percent in Eureka County, 21 percent in Humboldt County, 85 percent in Lander County, 19 percent in Lincoln County, 30 percent in Mineral County, 35 percent in Nye County, 28 percent in Pershing County, 29 percent in Storey County and 52 percent in White Pine County."

The extent to which Eureka County relies, economically, on the mining industry is quite apparent and significantly greater than that found nationally or in other Nevada counties. Fuel and non-fuel mining industries employed 388 persons and comprised 11 firms in 1981. Total payroll amounted to \$8,661,917. Net proceeds of mines assessed valuation for fiscal year 1980-81 equalled \$49,953,725; fiscal year 1981-82 equalled \$44,437,068. Eureka County had the second and fourth largest barite producers in 1982 for the state.



Of the twelve oil and gas wells drilled in Nevada during 1982, four of these were in Eureka County and accounted for over 30 percent of the total footage drilled for the year. A new oil field discovery resulted from this drilling, the Blackburn field, located in Pine Valley. First year production, from a single well, amounted to approximately \$427,000. Federal oil and gas leases in Eureka County by fiscal year 1982 numbered to 688 (an increase of seven percent). Federal geothermal leases in effect by fiscal year 1982 in Eureka County amounted to fourteen.

In Elko County the mining industry (fuel and non-fuel) for 1981 was the third largest economic sector. A total of 54 firms employed 742 persons and accounted for a \$17,051,878 payroll (second largest contributor to the total county payroll). Elko County net proceeds of mines assessed valuation totalled \$11,199,440 in fiscal year 1981-82. This represented a 86.6 percent change from fiscal year 1980-1981 of \$6,000,608. Although numerous mine reopenings occurred in late 1982-1983, net proceeds for 1982-1983 are expected to reflect the recessionary downturn in mining.

Total federal oil and gas leases and geothermal leases in Elko County by fiscal year 1982 numbered 1,849 and 30, respectively.

An account of the exploration and development of future mines/earth resources for the region (Eureka, Elko, Lander, Nye and White Pine counties) is given below. All excerpts have been taken from Nevada Bureau of Mines and Geology, special publication M1-1982 (1983).

"Newmont Mining Corporation acquired all the property necessary for the development of its Gold Quarry deposit in northern Eureka County late in August. The purchase of land and mineral rights totaled \$34.75 million. The deposit contains reserves of approximately 8 million oz gold. Newmont's Elko Land and Livestock Company subsidiary bought the 223,000-acre T Lazy S Ranch, including mineral interests owned by the ranch. The ranch encompasses the company's Carlin, Bootstrap, Bluestar, and Maggie Creek Mines. Newmont's Carlin Gold Company separately bought a 10% interest in the mineral rights to the Gold



Quarry property and entered into a new long-term lease of the remaining rights. Production is planned at 120,000 oz gold/year starting in 1985 or 1986. (Mining Congress Journal, November, 1982).

Carlin Gold Mining Company, a wholly-owned subsidiary of Newmont Mining Corporation, announced a new find at Rain, some 20 miles southeast of the Maggie Creek Mine in Elko County. Intensive drilling and geologic assessment is still underway; blocked-out reserves are estimated to contain 8.3 million tons of ore averaging 0.083 oz of gold/ton, including 3.4 million tons averaging 0.147 oz/ton. (Newmont Mining Company 1981 Annual Report).

Silver King Mines announced in May its acquisition of Gulf Oil's 51% interest in the Ward Mine south of Ely, White Pine County. Ore reserves are estimated at 17 million tons of silver-copper-zinc ore in limestone replacement bodies. Silver King plans to sink parallel, 4,000-foot inclined shafts. (Mining Record, Denver, June 30, 1982).

Duval Corporation has been developing its Fortitude gold deposit next to its Copper Canyon open-pit mine, 13 miles south of Battle Mountain in Lander County. Over 100 holes have been drilled and stripping was planned for 1982. Reserves were estimated at 14.5 million metric tons averaging 0.165 oz gold and 0.63 oz silver/metric ton. Ore would be mined by open-pit methods and processed at Duval's existing facilities; only minor modifications would be needed. Production is planned for late 1984. (1981 Report Duval Corporation).

AMAX, Inc. continued planning for the possible development of its molybdenum deposit at Buckingham, 7 miles south of Battle Mountain in Lander County. In March they applied for permits to drill a number of water wells sufficient to



provide water for a 86,000 tons/day mill. No date has been set for starting the project. (Humboldt Sun, Winnemucca, March 11, 1982).

Cortez Gold Mines, a joint venture of Placer Amex Inc., Webb Resources Inc. (a wholly-owned subsidiary of Standard Oil of Ohio), Bunker Hill Company, and Vernon F. Taylor, Jr., plans to begin production at its Horse Canyon gold deposit in mid-1983. The deposit is in Eureka County, 4 miles northeast of the Cortez mill. Reserves are estimated at 3.4 million short tons with a recoverable grade of 0.055 oz gold/ton. Mining is planned at 2,000 tons of ore/day with an annual production of 40,000 oz gold. Open-pit methods will be used. Over \$7 million will be spent to bring the mine into production. About 135 persons will be employed. (Elko Daily Free Press, November 8, 1982).

Cordex reportedly has reserves of 2.3 million metric tons averaging 0.11 oz gold/metric ton at its Boulder Creek property near the Bootstrap Mine in northern Eureka County. (Mine Development Monthly, November 19, 1982).

Elko Heat Company supplied geothermal water to its first customer, Vogue Laundry, in December of 1982. The 175°F geothermal fluid is piped from a well three-quarters of a mile west of downtown Elko. The heat company will also supply geothermal water to the Stockman's Hotel and the Henderson Bank Building. A U.S. Department of Energy grant of \$830,000 gave the project its start in 1978 (Nevada State Journal, December 9, 1982). Total cost of the project was approximately \$1.5 million (Oregon Institute of Technology, Geo-Heat Center Bulletin, Summer/Fall 1982). The return water (at 100° 110°F) will be stored in a pond near West River Street and will be used to irrigate city



parks (Elko Daily Free Press, October 12, 1982). Elko Heat has a consumptive use permit from the Nevada Division of Water Resources. Production of water from the Elko Heat well and a pump test at Hot Hole just southwest of Elko have prompted complaints to the Division from other owners of geothermal wells or springs in the area. Several owners report reduced flows or temperatures which may be related to recent drilling or pumping in the area (Elko Daily Free Press, 19, August 31, 1982; October 6, 1982).

The City of Elko drilled several test wells in Elko in 1982 in a search for geothermal waters that could be used for a sewage plant or to heat city buildings. A well drilled by the city near the Municipal Swimming Pool in November 1982 had temperatures over 125°F at 800 feet. Water from this well may be used for the swimming pool and to heat City Hall and the Convention Center (Elko Independent, November 10, 1982).

#### 2.4.2 Agriculture, Government and Other Sectors

Agriculture and government are major economic sectors for Eureka County. The employment figures on a county basis for these areas, as with mining, are also above state and federal averages.

In total, the three employment sectors of mining, agriculture and government utilize 75 to 85 percent of the county's employed workforce. Prior to 1980, however, the sectors of agriculture and government experienced declining employment.

Although agriculture is limited in Nevada due to the semi-arid climate, it is a major part of the Eureka County economy. There has been farming on Desert Land Entries in Diamond Valley, one of the largest farming districts in the state. Main crops in the valley include high altitude



alfalfa and small grain. Most of the harvest is fed locally to beef cattle and the remainder is sold and transported outside the area. Local merchants of Eureka offer services and products to the surrounding agricultural and mining communities of Diamond Valley, Crescent Valley and Beowawe.

In 1980, a total of 16,000 acres produced 44,800 tons of alfalfa hay in Eureka County. Recent figures estimate that over 30,000 acres of alfalfa hay exist. Other hays for 1980 accounted for 12,000 acres and produced 15,600 tons. Total hay accounted for 28,000 acres and produced 60,400 tons.

Cattle grazing and ranching in Eureka County for 1981 produced 40,000 head at an average value of \$405/head (\$16.20 million total).

Government employment in Eureka County in 1982 totaled 90 individuals and accounted for \$1,543,000 in payroll. County government has helped to stabilize the Eureka Town economy with county payroll providing a significant economic input. Eureka, despite a small population, has been able to continue providing a variety of services for a large marketing area.

Whereas the percentage of mining employment had been on the increase, the 1980-1983 recession has particularly affected the mining industry as a whole and thereby the Eureka County economy. Other economic sectors such as construction and manufacturing have grown progressively in Eureka County although the percentage of service industry employment remains substantially at a lower level than that found statewide or nationally.

Elko County's dominant economic sector has been the service industries, numbering 3,500 employees in 1982 and accounting for \$42,131,000 in payroll.

Agricultural activities in Elko County for 1980 broke down to 26,000 acres of alfalfa hay producing 65,000 tons; 148,000 acres of other hays producing 177,600 tons; cattle grazing and ranching producing 195,000 head at \$405/head for 1981 (total value of \$79 million).



Government employment engaged 1,610 individuals and accounted for \$29,034,000 in payroll for 1982 in Elko County. Gaming activity produced gross taxable revenues in 1981 of \$45,335,138, a 20.5 percent change from fiscal year 1980 (\$37,636,416).

## 2.5 Local Government and Public Finance

### 2.5.1 County and City Government

All the counties in Nevada are governed by three to seven elected county commissioners. In addition to the commissioners, some counties have a county manager position. Table 2-25 lists selected characteristics of county government for Eureka County and the surrounding counties.

Eureka County was established in 1873 by the Nevada State Legislature in response to mining induced population growth. The unincorporated Town of Eureka was designated the county seat, at which time it represented the largest population center in central Nevada. Presently, the town and the county are governed by three elected commissioners, each representing a different district of the county. There are two political townships in the County, each having their own Justice of the Peace. The following officials are elected: assessor (Beowawe), constable, clerk/treasurer, district attorney, justice of the peace (2), recorder/auditor and sheriff (Eureka). Officials of the Planning Board and T.V. Board are appointed (D. Pastorino, County Commissioner, personal communication, 1983). The unincorporated town of Crescent Valley is governed by an elected town board. Eureka County is under the jurisdiction of the Seventh Judicial District Court, with a courthouse in Eureka. The number of county employees, including part-time and hourly (temporary), totalled 49 in 1981 and 47 in 1982.

Table 2-26 lists selected administrative services and special districts and programs operating as a function of local government. These districts and programs are created by the local government for special issues and the resolution of particular problems. County support of services and



Mt. Hope Molybdenum Project

Table 2-25 Selected Characteristics of Counties in Nevada: 1981

County	Date Estab.	County Seat	County Manager	No. of County Commissioners	County Clerk	County Treasurer	County Recorder	County Auditor
Elko	1869	Elko	Yes	3	Yes <sup>1</sup> /	Yes <sup>1</sup> /	Recorder-Auditor	
Eureka	1873	Eureka	No	3	Clerk-Treasurer		Recorder-Auditor	
Lander	1862	Austin	No	3	Yes <sup>1</sup> /	Yes <sup>1</sup> /	Recorder-Auditor	
Nye	1865	Tonopah	No	3	Yes <sup>1</sup> /	Yes <sup>1</sup> /	Recorder-Auditor	
White Pine	1869	Ely	No	3	Yes <sup>1</sup> /	Yes <sup>1</sup> /	Recorder-Auditor	
County	District Attorney		County Assessor		No. of Political <sup>2</sup> / Townships		Election Official	
Elko	Yes		Yes		8		Clerk	
Eureka	Yes		Yes		2		Clerk	
Lander	Yes		Yes		2		Clerk	
Nye	Yes		Yes		4		Clerk	
White Pine	Yes		Yes		3		Clerk	

1/ Separate County Clerk and County Treasurer.

2/ There is one Justice of the Peace for each township.

Source: Nevada Legislative Counsel Bureau and Office of the State Planning Coordinator.



Mt. Hope Molybdenum Project

Table 2-26 Selected Administrative Services, Special Districts and Programs  
Eureka County

Selected Administrative Services	
Civil Defense	Public Health Doctor
Cooperative Extension	Library
Drafting	Police
Diagnostic and Treatment Center	Public Works
Fire Protection	Roads
Justice Department	Rodent/Weed Control
Juvenile Probation	Recreation
Special Programs	
Diamond Valley Rodent Control - (Town of Beowawe)	
Diamond Valley Weed Control - (Town of Eureka)	
Special Districts	
Eureka County T.V. District	
Eureka County School District	

Source: State of Nevada Office of Community Services, Eureka County Profile, 1982.



facilities includes an eight-person sheriff's department, volunteer fire department (partial), county road department, water and sewage, county pool and library, T.V. power relay, ambulance maintenance and a health clinic with a full-time doctor in residence.

Selected characteristics and types of government for various incorporated cities and unincorporated towns in the surrounding counties are shown in Tables 2-27 and 2-28.

Elko County was established in 1869, with the main industry being open range ranching. The now-incorporated City of Elko became the county seat.

There are eight political townships in the county, which is governed by a county manager and three elected county commissioners. In addition, an appointed seven member planning commission is active. Other elected officials include a county assessor, district attorney, eight justices of the peace, a county clerk, a county treasurer, a county recorder-auditor and a sheriff. The Fourth Judicial District Court has jurisdiction in the City of Elko. There are three municipal courts with jurisdiction of the Cities of Carlin, Elko and Wells.

Although somewhat seasonal in number, total county government employment is approximately 228. Administrative services of the county are extensive and include ambulance, health, road maintenance, recreation, welfare, sheriff and the courts system. As in Eureka County, special districts are created for singular issues and include T.V. service, fire protection and water provision. Selected administrative services, special districts and programs for Elko County and cities within the county are shown in Tables 2-29 and 2-30.

The City of Elko was incorporated in 1917 as a charter city and has a five-member council-manager governing body. The city clerk, manager, attorney, vice mayor, municipal judge and planning advisory committee (7) are all appointed. The city mayor is chosen by direct election and has voting power on the council. The council members (4) are elected at large.



Mt. Hope Molybdenum Project

Table 2-27 Selected Characteristics of Nevada's Incorporated Cities: 1981

County	City	Date of		Type of City <sup>1/</sup>	Type of Government	City Clerk	City Attorney	Municipal Judge
		Incorporation						
Elko	Carlin	10-22-25		Charter	Mayor-Council	Appointed	Appointed	Appointed <sup>2/</sup>
Elko	Elko	3-14-17		Charter	Council-Manager	Appointed	Appointed	Appointed
White Pine	Ely	7-20-07		General Law	Mayor-Council	Appointed	Appointed	Appointed
Nye	Gabbs	3-29-55		Charter	Mayor-Council	Appointed	Appointed	Appointed
Elko	Wells	3-28-27		Charter	Mayor-Council	Appointed	Appointed	Appointed
City	Mayor			Election of Council		Size of Governing Body		
	Direct Election	Elected By Council	Vote on Council	At Large	At Large Wards	By Ward		
Carlin	Yes	No	Yes	x			5	
Elko	Yes	No	Yes	x			5	
Ely	Yes	No	Yes <sup>3/</sup>		x <sup>4/</sup>		5	
Gabbs	Yes	No	Yes	x <sup>5/</sup>	x <sup>5/</sup>		4	
Wells	Yes	No	Yes	x			5	

<sup>1/</sup> Distinguishes between cities operating under Nevada Revised Statutes Chapter 266 or 267, General Law Cities, and those governed by Special Acts of the State Legislature, Charter Cities. All general law cities are currently under Chapter 266.

<sup>2/</sup> Comes into existence only if Justice of the Peace of Carlin Township ceases to exist.

<sup>3/</sup> Mayor may vote only to break ties on the Council.

<sup>4/</sup> Effective in 1979 election, formerly ward elections.

<sup>5/</sup> Two at large from two wards and the third is elected at large.

Source: Nevada Legislative Counsel Bureau and Nevada League of Cities.



Mt. Hope Molybdenum Project

Table 2-28 Type of Government of Unincorporated Towns in Nevada: 1981

<u>County</u>	<u>Town</u>	<u>Type of Government</u> <sup>1/</sup>
Elko	Jackpot	Advisory
	Montello	Advisory
	Mountain City	Advisory
	West Wendover	Advisory
Eureka	Crescent Valley	Elected Town Board
	Eureka	County Commissioners
Lander	Austin	County Commissioners
	Battle Mountain	County Commissioners
	Kingston	Elected Town Board
Nye	Beatty	Advisory
	Manhattan	Advisory
	Pahrump	Advisory
	Round Mountain	Advisory
	Tonopah	Advisory
White Pine	Lund	Advisory
	McGill	Advisory
	Ruth	Advisory

<sup>1/</sup> The term Advisory indicates whether the town has a Town Board form of government with 2 members being County Commissioners and 3 persons residents of the town, or the town has a 3 to 5-member Board of Residents which advises the Board of County Commissioners on town matters. If there is no town government the town affairs are run by the Board of County Commissioners.

Source: Nevada Legislative Counsel Bureau, Office of the State Planning Coordinator and Department of Taxation, Local Government Red Book, Fiscal Year 1980-1981.



Mt. Hope Molybdenum Project

Table 2-29 Selected Administrative Services, Special Districts and Programs

---

Elko County	
Selected Administrative Services	
Ambulance	Juvenile Control
Building Inspector	Justice Courts
Data Processing	Library
Engineer	Recreation
Fire Department (volunteer)	Road Maintenance
Golf Course	Sheriff
Health Services	Welfare

---

Special Programs	
Elko City/County Civic Auditorium (Town of Montello)	
Special Districts	
Carlin TV District	- (Town of Jackpot)
Elko TV	- (Town of Mountain City)
Northeast Fire Protection District	- (Town of West Wendover)
Starr Valley Cemetery District	
Tuscarora Water District	
Elko County School District	

---



Mt. Hope Molybdenum Project

Table 2-30 Selected Administrative Services for the Cities of Elko,  
Carlin and Wells, Elko County

---

City of Elko

Auditor  
Building Inspection  
Cemetery  
Engineer  
Fire Protection  
Golk Course  
Parks and Recreation  
Police  
Street/Landfill  
Water/Sewer

City of Carlin

Ambulance  
Fire Protection (volunteer)  
Garbage/Sewer/Water  
Engineer  
Police

City of Wells

Ambulance  
Auditor  
Community Health Nurse  
Fire Protection (volunteer)  
Golf Course  
Library  
Parks  
Police  
Public Works  
Senior Citizen Center  
Sewer  
Swimming Pool

---



The City of Carlin was incorporated in 1925 as a charter city and has a five-member mayor-council governing body. The city clerk and attorney are appointed. A municipal judge is appointed only if the position of Justice of the Peace of Carlin Township ceases to exist. The city mayor is chosen by direct election and has voting power on the council. The vice mayor and Justice of the Peace are also elected. The council members (3) are elected at large.

The City of Wells was incorporated in 1927 as a charter city and has a five-member mayor-council governing body. The city clerk/treasurer, attorney and municipal judge are all appointed. The mayor is chosen by direct election and has voting power on the council. The vice mayor is also elected. The council members (3) are elected at large. The unincorporated townships of Jackpot, Montello, Mountain City and West Wendover all have an advisory type of government. This entails a three to five-member Board of Residents for each town which advises the Board of County Commissioners on town matters.

#### 2.5.2 Public Finance

The major sources of revenue for Nevada are taxes from sales and personal use and gaming. The combined taxes of these three items account for over three-quarters of the state's general fund revenues. The majority of state revenues flow into the general and special revenue funds. The general fund is the major operating fund of the state and receives its income from taxes, licenses, fees and fines, administrative charges, use of money and property, federal government, local governments, the University of Nevada school fund and other sources. Special revenue funds are derived from the same sources as the general funds.

In fiscal year 1982, gross revenues for the state were \$460,973,510, an increase of 50.8 percent over the previous year. (Note: On May 1, 1981, the combined sales tax rate was increased from 3-1/2 percent to 5-3/4 percent and on July 1, 1981, the state gas tax rate increased from six cents per gallon to 10-1/2 cents per gallon). Of this amount, \$146,088,610 went to the general fund; \$36,393,134 to the highway fund; \$7,702,379 to the state distributive school fund; \$268,689,521 to local governments, and \$2,099,866 to



other miscellaneous entities.

Total federal government outlays in Nevada for the fiscal year 1980 were \$1.86 billion. The Department of Health and Human Services was the largest source of Federal funds, accounting for 27 percent of the total, followed by the Department of Defense (19 percent) and the Department of Energy (17 percent). Table 2-31 lists government outlays by federal agency for selected counties in Nevada (fiscal year 1980). Nevada's expenditure policy reflects the expansion and increased cost of government service. In the fiscal year 1980-1981, total state expenditures were \$764.2 million. The largest expenditure being for educational programs at 34.1 percent of the total, followed by human resource programs at 21.7 percent and highway traffic safety/motor vehicle programs at 20.8 percent. All other state programs make up the remaining 23.4 percent.

County Tax Structure and Revenue. The tax structures for Eureka and Elko counties are reviewed in the following. Information was taken from the county profiles (1982) of the respective counties as prepared by the State of Nevada, Office of Community Services and the Nevada Department of Taxation.

(1) Sales Tax - Overall Tax Rate: 5.75 percent

Collection: Monthly (from retail merchants)

2 percent Sales Tax

Rate: 2 percent

Distribution of Tax Revenues: State General Fund

Legal Citation: Chapter 374-NRS

Local School Support Tax

Rate: (Up to 4/81) 1 percent (from 5/81) 1.5 percent.

The 5/81 increase of .5 percent terminated on 6/30/83.

Reductions in this tax will result in increased state support as guaranteed by current NRS.



Mt. Hope Molybdenum Project

Table 2-31 Federal Outlays by Federal Agency in Nevada by County:  
Fiscal Year 1980 (in Thousands of Dollars)

County	Dept. of Agriculture	Dept. of Commerce	Dept. of Defense	Dept. of Education	Dept. of Health & Human Services	Dept. of Housing & Urban Develop.	Dept. of Interior
Elko	\$ 15,633	\$ 1,731	\$ 1,266	\$ 467	\$ 11,346	\$ 376	\$ 10,919
Eureka	235	5	-	6	774	-	585
Lander	509	14	75	120	1,984	140	2,670
Nye	3,953	139	3,992	214	5,829	75	2,527
White Pine	1,501	339	364	106	9,223	212	3,599

County	Dept. of Justice	Dept. of Labor	Dept. of Transport.	Action	Office of Personnel Mgt.	Dept. of Energy	Environmental Protection Agency	Community Services Administration
Elko	\$ -	\$ 395	\$ 25,646	\$ 28	\$ 1,460	\$ -	\$ 1,714	\$ -
Eureka	-	6	184	-	127	-	273	-
Lander	-	16	8,466	-	317	-	34	-
Nye	-	34	4,152	-	508	296,956	722	-
White Pine	-	372	438	-	952	-	-	-



Mt. Hope Molybdenum Project

Table 2-31 Federal Outlays by Federal Agency in Nevada by County: Fiscal Year 1980  
(in Thousands of Dollars) (continued)

County	Equal Employment Opportunity	Fed. Home Loan Bank Board	General Services Admin.	NASA	Nat'l Foundation Arts & Humanities	Nat'l Science Foundation	Postal Service
Elko	\$ -	\$ -	\$ 130	\$	\$	\$	\$ 1,304
Eureka	-	-	-	-	-	-	123
Lander	-	-	2	-	-	-	172
Nye	-	-	2	-	-	-	590
White Pine	-	-	69	391	-	-	615

County	Railroad Retirement Board	Small Business Admin.	Treasury Dept.	Veterans Admin.	Water Resources Council	Selective Service	Interstate Commerce Comm.	Other Agencies	Total Federal Outlay
Elko	\$ 1,744	\$ -	\$ 290	\$ 1,227	-	-	-	-	\$ 75,803
Eureka	-	-	30	104	-	-	-	-	2,451
Lander	68	-	75	264	-	-	-	-	14,926
Nye	134	198	129	723	-	-	-	-	320,877
White Pine	425	100	117	835	-	-	-	-	19,658

Source: Community Services Administration, Geographic Distribution of Federal Funds in Nevada, FY 1980.



Distribution of Tax Revenues: State Distributive School

Fund

Legal Citation: Chapter 374-NRS

County - City Relief Tax (CCRT) (Basic Tax)

Rate: 0.5 percent

Distribution of Tax Revenues:

In-state revenues:

99.5 percent to county of origin;

0.5 percent to State General Fund

Out-of-State revenues:

100 percent prorated to counties and cities based on population.

Legal Citation: Chapter 377-NRS

Supplemental County - City Relief Tax

Rate: 1.75 percent

Distribution of Tax Revenues:

99.5 percent to all governmental entities based upon a prescribed formula (see Chapter 337-NRS for formula citation). The purpose is to facilitate lower property taxes. The SCCRT terminated on 6/30/83.

Legal Citation: Chapter 149-NRS as amended to Chapter 337-NRS.

(2) Gasoline Tax

Rate: Vehicle and Aviation - \$0.105 cents per gallon plus optional county levy of \$0.01-\$0.04 cents (as of 7/1/81).

Distribution of Tax Revenues:

Vehicle: \$0.08 cents (state tax and licenses):

State Highway Fund

Vehicle: \$.025 cents (County tax): Construction, maintenance, and repair of county and city streets.



Vehicle: \$0.01-\$0.04 cents (Optional County Tax): For regional highway and street construction.

Aviation: \$0.105 cents (State and County):

Civil Air Patrol Fund (state)

Airport construction and maintenance (county).

Aviation: \$0.01-\$0.04 cents (Optional County Tax):

Airport construction and maintenance.

Petroleum Inspection Fees:

1

20th/1 cent per imported gallon (State General Fund)

Legal Citation: Chapter 365-NRS: Chapter 373-NRS

(3) Cigarette Tax

Rate: \$0.10 cents per package of twenty

\$150 license fee (annually for wholesalers)

Distribution of Tax Revenues:

100 percent to local governments (County and City).

Distribution of revenues within a county is based upon a population ratio.

Legal Citation: Chapter 370-NRS

(4) Liquor Tax

<u>Rates:</u> Distilled Spirits:	\$2.05/gallon
Fortified Wines:	\$0.50/gallon
Light Wine:	\$0.30/gallon
Beer:	\$0.06/gallon

<u>License Fees:</u>	<u>Annual</u>
Importer Wine, Beer, Liquor:	\$ 500
Importer Beer:	150
Wholesaler Wine, Beer, Liquor:	250
Wholesaler Beer:	75



Distribution of Tax Revenues:

5/19ths of collections on over 22 percent alcohol concentrations, which is distributed to the county and cities. Remaining revenues are distributed to the State General Fund, except for \$0.15/gallon which is transferred to the Department of Human Resources, Bureau of Alcohol and Drug Abuse.

Legal Citation: Chapter 369-NRS.

(5) Ad Valorem Tax (Property Tax)

Total Assessed Valuation of Property: (35 percent of taxable valuation)

Taxable value is based on the cost appraisal approach where value is determined by establishing the replacement cost minus depreciation. Taxable value depreciation, unlike the traditional cost approach depreciation, is based on a straight depreciation scale. NRS also limits the taxable value not to exceed the market value. Ad valorem revenue is derived from the five basic sources of school district, county, city(s), town(s) and special district(s). The school district ad valorem tax offsets or reduces state support of the school system.

Tax Rate Range for the County:

The ad valorem tax rate is a combined rate that includes a local government rate, local government debt rate, special district(s) rate, school rate and county rate.

Net Mining Proceeds Valuation:

All products produced and sold from mining operations are allowed deductions for certain operational costs (by NRS) and the resultant "Net Proceeds" are then taxed at the



ad valorem rate of the specific taxing district where the mine is located.

(6) Senior Citizen Programs - Property Tax Rebate

Eligibility: 65 years and older, with an income of not more than \$12,000 annually.

<u>Rate:</u>	<u>Income Range (Annual)</u>		
	(over)	(but not over)	(Rebate Percent)
	0	\$ 4,500	90
	\$ 4,501	7,000	75
	7,001	10,000	50
	10,001	11,000	25
	11,001	12,000	10

Tax revenue collections for Eureka and Elko counties (1980-81; 1981-82) are shown in Tables 2-32 through 2-37. County budgets are broken down by sector for Eureka and Elko counties and shown in Table 2-38.

The tentative 1983-1984 Eureka County budget of \$1,734,030 represents a negative 34 percent change from the 1981-1982 budget of \$2,626,060. This is a marked change from the increasing budget trends of prior years (1980-81 equalling \$2,104,454 and 1979-80 equalling \$1,587,761). The decline represents the effects of both a recessionary economy and tax restructuring. The county has substantially reduced special project budgets and overall expenditures in order to accommodate the fiscal constraints. Eureka County budgeting does not include the budget of the Eureka County School District which retains political independence.

On a regional basis, Eureka County has a moderately broad revenue base from which services are supported. During 1981, legislation greatly reduced the local jurisdiction's state reliance on assessed valuation taxes and substituted shared revenue from the statewide 5.75 percent sales and use tax (NRS Chapter 374). Increased state support, as guaranteed by current statute, is planned to offset revenue losses. The effect of the 1981 legislation is apparent in view of revenue/expenditure data and annual variations thereof.



Mt. Hope Molybdenum Project

Table 2-32 Sales Tax Revenue Collection for Eureka and Elko Counties

Revenue	Eureka		Elko	
	1980-81	1981-82	1980-81	1981-82
Two Percent Sales Tax	\$235,675	\$124,141	\$2,504,170	\$2,780,960
Local School Support Tax	119,427	84,164	1,298,342	2,011,367
County-City Relief Tax	2,438	40,665	10,044	79,861
(CCRT) (Basic Tax)	(6 mo.)		(City of Carlin)	
			589,918	567,712
			(City of Elko)	
			89,572	78,953
			(City of Wells)	
Supplemental County-City Relief Tax				
County	0	552,582	0	990,473
City	0		0	82,700
				(Carlin)
				559,384
				(Elko)
				79,124
				(Wells)
Special Districts/Townships	0	12,497	0	164,551

Source: State of Nevada Office of Community Services, Elko County and Eureka County Nevada Profiles, 1982.



Mt. Hope Molybdenum Project

Table 2-33 Gasoline Tax Revenues for Eureka and Elko Counties

County	1980-1981	1981-1982
Eureka		
County Tax	\$ 61,859	\$109,020
Elko		
County Tax	\$420,476	\$684,979
Aviation	-	-

Source: State of Nevada Office of Community Services Eureka and Elko Counties,  
Nevada Profiles, 1982



Mt. Hope Molybdenum Project

Table 2-34 Cigarette Tax Revenues for Eureka and Elko Counties

County	1980-1981	1981-1982
Eureka		
County Tax	\$ 24,772	\$ 19,735
Elko		
Carlin	\$ 47,282	\$ 31,270
Elko City	277,591	222,288
Wells	39,327	30,918

Source: State of Nevada Office of Community Services Eureka and Elko Counties,  
Nevada Profiles, 1982



Mt. Hope Molybdenum Project

Table 2-35 Distribution of Liquor Tax Revenues for Eureka and Elko Counties  
(5/19ths over 22 percent alcohol)

County	1980-1981	1981-1982
Eureka		
County	\$ 4,273	\$ 3,185
Elko		
County	\$62,912	\$45,907
Carlin	8,248	5,042
Elko City	47,873	35,872
Wells	6,791	4,989
State General Fund (statewide)	\$9,189,020	\$11,798,960

Source: State of Nevada Office of Community Services Eureka and Elko Counties,  
Nevada Profiles, 1982



Mt. Hope Molybdenum Project

Table 2-36 Ad Valorem Tax (Property Tax) Revenue and Assessed Valuation of Property for Eureka and Elko Counties

County	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984 (Estimated)
<hr/>					
Ad Valorem Tax (Property Tax)					
Eureka	\$ 738,888	\$ 999,710	\$ 545,082	\$	\$
Elko	4,381,026	3,496,872	2,838,087	762,434	1,014,046
<hr/>					
Total Assessed Valuation of Property					
Eureka	N/A	N/A	\$72,410,576	\$ 68,721,284	N/A
Elko	N/A	N/A	N/A	245,730,895	260,518,684

Source: State of Nevada Office of Community Services Eureka and Elko Counties, Nevada Profiles, 1982.



Mt. Hope Molybdenum Project

Table 2-37 Senior Citizen Programs - Property Tax Rebates for Eureka and Elko Counties

County	1981-1982
Eureka	\$ 364
Elko	\$16,637

Source: State of Nevada Office of Community Services Eureka and Elko Counties, Nevada Profiles 1982



Mt. Hope Molybdenum Project

Table 2-38 Selected County Budgets 1979-80, 1980-81

<u>County</u>	<u>Local Budget Sector</u>	<u>1979-80</u>	<u>1980-81</u>
Eureka	School District	\$1,441,208	\$1,418,664
	Total Cities	0	0
	Total Townships	233,358	637,684
	Total Special Districts	<u>36,078</u>	<u>44,320</u>
	Eureka County Total	\$1,587,761	\$2,104,454
Elko	School District	\$10,523,222	\$10,284,338
	Total Cities (3)	8,894,790	15,576,873
	Total Townships (4)	1,368,615	1,186,289
	Total Special Districts (12)	<u>917,513</u>	<u>931,929</u>
	Elko County Total	\$10,858,424	\$13,005,992

Source: State of Nevada, Office of Community Services. Eureka and Elko County Nevada Profiles, 1980 and 1981.



For example, approximately 51 percent of revenues were derived from the Ad Valorem taxes (0.7964 - 0.7464 per \$100 assessed value) in 1980-1981; but only 13 percent was derived from the Ad Valorem tax in 1981-82.

Excluding debt service and major capital expenditures, the Eureka County revenues and operating expenses tend to be population and property value sensitive. The county property tax base (total assessed valuation) for 1982-83 equalled \$68.7 million, a five percent decrease from 1981-1982 (\$72,410,576). Comparing historical property tax revenue growth with total revenue growth, the county's increasing reliance on the property tax to support local public services is readily apparent. The percentage of property tax valuation attributable to net mining proceeds (1982-1983, \$49.95 million of \$68.72 million) indicates the significant value of the mining industry to the Eureka County economy.

The Eureka Town budget and associated allocations for 1980-1981 and 1982-1983 are presented on Table 2-39. The Town supplements county services with health service facility support, fire department, streets and sewer support. In fiscal years 1979-1980 to 1980-1981 there was a 173 percent gain in the Town budget (from \$223,358 to \$637,685). However, a decline began as a result of the recession and tax restructuring to the most recent budget of \$195,752 in 1982-1983 and a tentative 1983-1984 budget of \$139,709.

The tentative 1983-1984 school district budget has been set at \$1,440,620 which is a decrease of seven percent from the 1982-1983 budget of \$1,554,448. The 1983-1984 budget represents a return to the budget amounts of previous years (\$1,418,664 in 1980-81 and \$1,441,208 in 1979-1980).

Table 2-40 lists revenues and expenditures of the local jurisdictions for recent year periods on the basis of per capita.

Substantial economic interaction exists between Eureka County and the Eureka County School District. County developments such as the pool and sports complex were arranged to be constructed on other party property (i.e., pool on county property, sports complex on school property). As of May, 1983 the school district had an approximate debt capacity of \$10.3 million (Wilcox,



Mt. Hope Molybdenum Project

Table 2-39 Town of Eureka Budget Fiscal Year 1980-81 and 1982-83

Revenues	1980-1981 \$	1982-1983 \$
Ad Valorem Taxes	1,091	433
Supplemental County Relief	0	884
Licenses/Fees	870	1,500
Intergovernmental Revenue		
Payments in Lieu of Tax	44,768	40,000
Motor Vehicle Tax	2,579	4,137
State Gaming License Fee	46,663	52,000
Grants (APA Sewer-Federal)	249,252	0
Charges for Services		
Sewer	4,856	0
Bail Forfeit	20	0
Misc. Sales/Rentals	2,353	0
Opening Balance	6,811	96,798
<hr/>		
Expenditures		
Fire Department		
Salaries and Wages	720	1,000
Benefits	0	800
Services/Supplies	2,508	4,000
Capital Outlays	1,505	2,700
Streets/Highways		
Services/Supplies	810	40,000
Lights	3,078	8,000
Sewer		
Salaries and Wages	56	0
Services/Supplies	1,783	0
Capital Outlay	348,223	0
Water Fund Transfer	0	123,500
Contingency	0	1,600
End Fund Balance	580	14,152



Mt. Hope Molybdenum Project

Table 2-40 Revenues and Expenditures of Local Jurisdictions <sup>1/</sup>  
(Normal Annual Recurrent)

	Budget 1982/1983			Budget 1981-1982		
	Eureka Town	Eureka County	Eureka School District	Carlin Town	Elko County	Elko School District
Revenues	98,994	637,694	1,043,441	250,419	1,779,441	9,148,218
Expenditures	67,600	982,300	1,279,650	357,906	2,993,817	9,272,926
Population						
Total	585	1,184	1,184	1,269	18,938	18,938
School	213	225	225	318	4,218	4,218
Per Capita/(Student)						
Revenue	169.15	543.24	877.47	93.97	483.06	193.37
Expenditures	115.56	795.86	1,080.78	158.13	494.98	282.04
(Student)			(5,687.33)			(2,222.36)

<sup>1/</sup> Omits capital outlays, opening and closing balances.



personal communication, 1983).

The future of Eureka County in terms of its baseline public finance capabilities without the Mt. Hope project will largely be dependent upon five determining factors: 1) mining industry proceeds; 2) population growth; 3) property tax base; 4) availability of government and private financing; and 5) the impacts of 1981 legislation (or amendment thereof in 1983) limiting property tax rates and government spending.

The tentative 1983-1984 Elko County budget of \$35,218,413 represents a positive 31.4 percent change from the 1982-1983 budget of \$26,794,711. Elko County property tax base (total assessed valuation) equalled \$245.7 million for 1981-1983 and \$260.5 million for 1983-1984. The property tax (ad valorem tax) rate for the county ranges from \$1.5819 - .9630 per \$100 of assessed value. In 1981-1982 the property tax revenue was \$2,838,087, a decrease of 18.8 percent from the 1980-1981 revenue (\$3,496,872). The 1982-1983 property tax revenue of \$762,434 reflected a decrease of 73.1 percent. Property tax revenue reductions were the effect of 1981 legislature and are to be offset by increased state support, as guaranteed by statute. Property tax revenue for 1983-1984 is estimated to be \$1,014,046, which would reflect a 33 percent increase in revenue from the previous year (1982-1983) but still a 71 percent decrease in revenue from the 1980-1981 total.

City of Elko budgeting of revenues for fiscal year 1982-1983 totalled \$5,530,543, a 20.8 percent change from the fiscal year 1981-1982 amount of \$4,578,313. Budgeted expenditures for 1982-1983 (\$7,679,448) represented a 12.2 percent change from the fiscal year 1981-1982 amount of \$6,884,981. Major expenditure increases occurred in categories of culture/recreation and capital outlay.

City of Carlin budgeting of expenditures for fiscal year 1982-1983 (\$394,142) increased by 4.79 percent from fiscal year 1981-1982 (\$376,100). Revenues for the same period increased 6.08 percent from \$324,341 to \$344,076.

The tentative 1983-1984 White Pine County budget of \$6,710,097 represents a negative 1.6 percent change from the 1982-1983 budget of \$6,818,195.



As with the case of Eureka and Elko Counties, this is also a reversal in trend from the previous years (1980-81 equalling \$6,845,137 and 1979-80 equalling \$5,701,865).

## 2.6 Housing

In 1970, there were 160,052 housing units in Nevada (68.6 percent increase from 1950) of which 58.5 percent were owner occupied. By 1980, the housing unit total reached 304,327 of which 59.6 percent were owner occupied. This represented a 47 percent increase in housing units during a ten-year period. Table 2-41 lists the number of occupied housing units for selected counties in Nevada. The value of owner occupied housing and renter occupied housing for Nevada counties are shown in Table 2-42. Eureka and White Pine counties had the second and third lowest owner occupied median values (1980) in the state, respectively. Eureka County contained 605 total housing units in 1980, approximately 43 percent of which were located in or proximal to the Town of Eureka. The remaining housing unit balance was mostly dispersed in the unincorporated towns of Crescent Valley and Beowawe. Of 605 total units, 56 were designated as seasonal or second homes and 549 units existed as available primary residences. A total of 446 primary dwelling units (81.2 percent) were occupied; 306 by owner, 140 by renter. Vacant units accounted for 103 of available primary housing units (18.8 percent). Single-family units accounted for 218 or 39.7 percent of the 549 primary residence units. Mobile home units were second in numerical rank order at 193 units or 35.2 percent of primary residence units, nearly three times the state average of 12.1 percent. Multiple family housing totalled 138 units; the number of persons per unit averaged 2.66 in 1980.

Of the total housing units in Eureka County, 33.4 percent (202 units) were built prior to 1949, 29.2 percent (177 units) were built during the period 1950 to March of 1970, and 37.3 percent (226 units) were built during April of 1970 to the year ending 1980.

Median value of Eureka County single-family and mobile home units in 1980 equalled \$22,700. Median cash rental for the same period equalled \$128 per month. Government assisted financing for home construction and/or



Mt. Hope Molybdenum Project

Table 2-41 Number of Occupied Housing Units for Selected Counties in Nevada  
1950, 1960, 1970 and 1980

County	Total			Occupied by				Percent Owner Occupied	
	1950	1960	1970	1980	Owner		Renter	1970	1980
					1970	1980			
Elko	3,478	3,777	4,555	6,350	2,683	3,974	1,872	2,376	58.9 62.6
Eureka	334	294	335	446	201	294	134	152	60.0 65.9
Lander	583	509	843	1,426	496	929	347	497	58.8 65.1
Nye	1,115	1,512	1,813	3,434	1,066	2,291	747	1,143	58.8 66.7
White Pine	2,744	2,989	3,116	3,003	2,267	2,244	849	759	72.8 74.7
STATE	50,241	91,520	160,052	304,327	93,676	181,265	66,376	123,062	58.5 59.6

Source: U.S. Bureau of the Census, Census of Housing 1950, 1960, and 1970 and Summary Tape File 1A, 1980.



Mt. Hope Molybdenum Project

Table 2-42 Value of Owner Occupied Housing and Contract Rent of Renter Occupied Housing in Nevada by County: 1970 and 1980

<u>County</u>	<u>Owner Occupied</u> <u>Median Value</u>		<u>Renter Occupied</u> <u>Median Rent</u>	
	<u>1970</u>	<u>1980</u>	<u>1970</u>	<u>1980</u>
Carson City	\$22,700	\$75,200	\$ 119	\$ 259
Churchill	17,100	58,900	76	183
Clark	23,100	67,800	136	264
Douglas	28,800	90,000	159	346
Elko	17,700	49,900	80	157
Esmeralda	7,900	18,100	-	103
Eureka	5,800	22,700	66	128
Humboldt	18,400	51,300	73	172
Lander	12,400	48,700	81	162
Lincoln	10,200	32,800	62	146
Lyon	17,600	59,000	77	175
Mineral	13,000	33,200	74	172
Nye	8,600	35,600	70	155
Pershing	11,700	38,600	71	129
Storey	12,100	70,600	56	156
Washoe	23,700	77,600	119	294
White Pine	10,400	28,800	65	117
STATE	22,400	-	123	-

Source: U.S. Bureau of the Census, Census of Housing, 1970 and Summary Tape File 1A, 1980.



purchase (e.g. FHA, FMHA Loans) was available but not utilized in the county (Wilcox, personal communication, 1983). No units received government assisted financing for rental construction, operation and/or rental payment supplements.

Comparative review of 1970 and 1980 housing type data (Table 2-43) indicates that 100 percent of housing addition activity in Eureka County has been multi-family and mobile homes (negating single-family housing, 47.2 percent and 52.8 percent respectively). Between 1970 and 1980, an average of only 17 housing units were added to the housing stock per year. The total number of units was 44.9 percent higher than in 1970, excluding seasonal/second houses.

The number of multiple family units rose at a dramatic rate of 151 percent during the period of 1970 and 1980. The total number and rate of increase (93 percent) of mobile home units demonstrates substantially increased reliance upon that mode of housing, apparently indicating a trend toward centralizing population centers by work place.

The 10.4 percent increase of vacancy rate/housing availability (1970-1980) may not represent an entirely valid picture of the overall housing trend. The large increase of multiple family units would correspondingly allow a greater increase in vacancy ratios due to the nature of tenant use; specifically apartment dweller versus homeowner stability. Although more units as a whole may be available, housing size, age or purpose may be the determining factor. Excess capacity in single family housing may be nil, whereas apartment or boarding house occupancy may equal 75 to 85 percent, an acceptable industry minimum. In discussions held over the period 1981-1983, Eureka County officials emphasized that the significant lack of housing availability was primarily due to age and general condition of the existing units.

Housing characteristics in Elko County describe a total of 7,667 units in 1980, of which 6,350 were occupied as primary residences. Urban area housing accounted for 47.6 percent (3,649 units) of the county total, while rural area housing composed 52.4 percent (4,018 units). Of 7,667 total units, 468 were designated as seasonal or second homes and 7,199 units existed



Mt. Hope Molybdenum Project

Table 2-43 Housing Type - Historical Review Eureka County<sup>1/</sup>

Housing Type	1970	1980	Percent Change	No. Unit Change/Yr.
Total Housing Units	379	549	44.9	17.0
Occupied Units	347	446	28.5	9.9
Vacant Units	32	103	221.9	7.1
Single-Family	224	218	-3.0	-0.6
Multiple Family	55	138	150.9	8.3
Mobile Home	100	193	93.0	9.3
Persons/Unit	2.73	2.66	-2.6	NA

<sup>1/</sup> Does not include seasonal and second homes.

Source: State of Nevada Office of Community Services, Eureka County Nevada Profile, 1982 and U.S. Bureau of the Census, 1980.



as available primary residences. The total of 6,350 primary dwelling units (82.8 percent of county total) were occupied by 3,974 owners (62.6 percent) and 2,376 renters. Vacant units accounted for 849 of the available primary housing units (11.8 percent). Single family units accounted for 3,906 or 54.3 percent of the available primary residences. Mobile home units were second in numerical rank order at 1,823 or 25.3 percent of primary residence units, slightly greater than twice the state average of 12.1 percent. Multiple family housing units totalled 1,470 or 20.4 percent of primary residence units. The number of persons per unit averaged 2.67 in 1980.

Of the total housing units in Elko County, 35.8 percent (2,744 units) were built prior to 1949, 30.6 percent (2,345 units) were built during the period 1950 to March of 1970, and 33.6 percent were built from April of 1970 to the year ending 1980.

Median value of Elko County single-family and mobile home units in 1980 equalled \$49,900. Median cash rental for the same year equalled \$157 per month. In 1981, there were 374 units receiving rental construction, operation and/or rental payment assistance. For the same year there were 63 units receiving home construction, purchase or both assistance (not including FHA loans). Housing in Elko City is reportedly at capacity although land lots remain available. The Elko Chamber of Commerce found new unit median prices of \$85,000 and \$75,000 for 30-year-old units in 1980. Median rent for two bedroom apartments equalled \$335 per month.

Comparative review of 1970 and 1980 housing type data for Elko County (Table 2-44) indicates that mobile home and multi-family housing is responsible for most of the housing addition activity (mobile home = 43.6 percent, multi-family = 30.5 percent and single family = 25.9 percent). Between 1970 and 1980, an average of 257 units were added to the housing stock per year. The total number of units was 50.4 percent higher than in 1970 (including seasonal/second homes).

The number of single family units only rose 16.3 percent during the period 1970 to 1980. The number of mobile home units rose dramatically at the rate of 101.8 percent and reflects an even greater reliance upon this



Mt. Hope Molybdenum Project

Table 2-44 Housing Type - Historical Review Elko County<sup>1/</sup>

Housing Type	1970	1980	Percent Change	No. Unit Change/Yr.
Total Housing Units	5,097	7,667	50.4	257
Occupied Units	3,002	6,350	111.5	334.8
Vacant Units	NA	849	-	-
Single-Family	3,359	3,906	16.3	54.7
Multiple Family	827	1,470	77.8	64.3
Mobile Home	903	1,823	101.8	92
Persons/Unit	NA	2.67	-	-

<sup>1/</sup> Includes seasonal and second homes.

Source: State of Nevada Office of Community Services, Elko County  
Nevada Profile, 1982 and U.S. Bureau of the Census, 1980.



type of housing, in addition to an apparent trend toward centralizing population centers by work place (as in Eureka County). The number of multiple family units rose at a substantial rate of 77.8 percent during the 1970-1980 period.

## 2.7 Attitudes and Lifestyles

Because it is too early in project planning phases to initiate community field studies (e.g., comprehensive questionnaires, surveys, etc.) in the Town of Eureka, this section discussion of community attitudes and lifestyles has been prepared to reflect available data. The discussion is based largely on the results and comments expressed during the scoping meetings, in public response, letters and verbal communications to the BLM, policies revealed in the Eureka County General Plan, as well as the professional experience of the preparers.

To determine the fiscal and socioeconomic baseline presented in the previous section, the WRC EIS team interviewed numerous individuals (both private citizens and public officials) in the Town of Eureka and Eureka County. While this section largely represents an overview of the literature-based information available concerning the Eureka County peoples and their lifestyle, certain qualitative views presented reflect both the results of WRC interviews and interpretations of the letters received and BLM forwarding of verbal comments from civic leaders in Eureka. In truth, the simple announcement of the EXXON Mt. Hope project has led to an exchange of ideas about present and potential lifestyles, thereby directly affecting the nature of the "baseline" attitudes and lifestyles. As dynamic in fluctuation as attitudes may be, the point of beginning for a "baseline" characterization must necessarily be current with EIS development regardless of the changes perhaps already underway. Lifestyles can be fairly well characterized as baseline, however, as the project factors most significantly capable of effecting change (e.g. population influx, economic surge, etc.) would not occur or be in place until following implementation of the proposed action or alternatives.

Thus, the following discussion attempts to relate the current (post announcement, pre DEIS publication) characteristics of Eureka County and Town



lifestyles and attitudes. Historical characterizations, derived from literature, are presented as deemed relevant. The establishment of baseline conditions for impact analysis relative to lifestyles and attitudes has additionally involved the identification of community services and support facilities (e.g. schools, health care, recreation) of which availability and use factors provide important indicators of attitude. Chapter 3.0 relates discussion concerning the anticipated impacts of attitude/lifestyle relative to project effects upon community services and facilities and quality of life, thereof. Baseline conditions are presented elsewhere in this section.

The attitudes and lifestyles of the people of Eureka County and particularly the Town of Eureka, can historically be attributed to the predominant influence of mining and the overall physiographic characteristics of the area (e.g. rugged terrain, alternating mountain ranges/desert basins and isolated location). As exhibited by the historical background of its "boom and bust" economy resulting from fluctuating mining activities, and its western rural character, a strong degree of individualism and self-reliance exists among the population as a whole. Fiscal reliance upon entrepreneurial enterprises (e.g. country stores, ranching, farming, etc.) as the sustaining mechanism of County/Town residency has played a major role in attitude development.

The traditional social structures and value systems associated with remote rural areas of the western U.S. appear to be characteristic of the Eureka County population, subject to the continuing influence of mining activity and fluctuations thereof. Residents have a strong endorsement of rural values emphasizing three main points that may be perceived as essential to their well-being and a positive quality of life. The three points are a love for open space, clean air and relaxed lifestyles. Many residents, particularly merchants and those offering services, also have a strong endorsement for moderate growth and economic and industrial diversification. But, an increasingly important influence upon the county lifestyle is the trend toward immigration of urban people who are attracted by the relaxed, unhurried, rural atmosphere. An associated "anti-growth" attitude appears to have correspondingly developed to a limited extent and has to some degree contradicted the established attitude which has sought industry development.



As stated in a letter received by the BLM (Battle Mountain) from an individual responding to the Mt. Hope Project, "Having moved here from a "boom town", we, along with most of the residents of Diamond Valley have no wish to be associated with another one..." In contrast, a Eureka Town resident submitted his written response at the scoping meeting as follows: "All for it. I have two 10-wheeler dump trucks and one 18-foot flat bed dump truck and backhoe. Ready to work". While many residents may perceive a desperate need for commercial/industrial diversification, there are others who adamantly oppose any such change.

Additional insight into the attitudes and lifestyles of Eureka County residents are reflected in the goals and objectives selected by the Eureka Citizens Committee for the Eureka County General Plan (1974). A unified set of goals were recommended, of which nine of these goals have been abstracted and appear below. It should be kept in mind, however, (and as stated in the General Plan) that in the case of a mining boom, "such growth might very well change the courses of action the Planning Commission and Board of County Commissioners have currently contemplated or can be foreseen by this General Plan".

GOAL 1: That the County protect farming, ranching and mining as they are known today.

- Objectives:
1. That lands suitable for mining and agriculture be reserved for these purposes.
  2. That a minimum size be established for any new residential lots on mining and agriculture land through the adoption of zoning ordinances.
  3. That a minimum size be established for all new farming and ranching units through the adoption of a zoning ordinance.
  4. That guidelines and ordinances be established to provide for orderly progress in mining.
  5. That future highways be located so as not to interfere with agricultural and mining productivity.



- GOAL 2: That the County endeavor to protect its water areas, rangelands, mountains, open views, meadow lands, and air from development that would reduce the County's desirability to the local residents.
- GOAL 4: That orderly and modest growth be encouraged in the urbanizing areas of Eureka, Beowawe and Crescent Valley only.
- GOAL 5: That broader goods and services be stimulated in the townsites of Eureka, Beowawe and Crescent Valley.
- GOAL 7: That lands presently controlled by grazing agencies be defined, zoned and maintained to permit optimum private uses in accordance with General Plan proposals.

- Objectives:
1. That continued grazing privileges for cattle and sheep are essential to the preservation of the livestock industry and no further lands should be withdrawn from uses unless compensatory AUMs are provided.
  2. That the horse population be controlled and the BLM be encouraged to manage these animals as closely as possible.
  3. That ordinances to protect the natural landscape be developed by the people of Eureka County.
  4. That BLM land be made available for private purchase when need for agricultural and mining growth be proved necessary.

- GOAL 8: That the County control the location and extent of new business and industry by zoning or other methods.
- GOAL 9: That the County's historic resources be protected.
- GOAL 11: That community attractiveness be sought through voluntary citizen efforts.



Objective: 1. That all public buildings be maintained in such a manner as to encourage private interests to upgrade the physical condition of other structures.

GOAL 12: That residential improvements be encouraged which are in keeping with individual neighborhood desires.

Major concerns expressed by Eureka County residents in regards to the Mt. Hope Project were as follows:

1. Surge in population growth;
2. Environmental safety/ecology;
3. Land reclamation/restoration;
4. Water source and usage;
5. Grazing allotment impact;
6. Land acquisition methods;
7. Cultural resources impact.

The major concern with population influx is viewed as meaning that more community facilities will be needed, more land for urban development, more roads, etc. The possibility of a mining "bust" on the other hand, has been expressed by residents and is viewed as producing opposite or negative effects. Another concern with population growth was expressed in reference to the preservation and protection of Eureka, being a National Historic district, and that the project workers would not appreciate or respect this. Population influx is seen by some residents as bringing adverse effects upon their recreation/leisure lifestyle due to more individuals fishing, hunting, poaching and general overuse of limited recreational areas. The topic of hunting in Eureka County is already a sensitive subject. This is because resident Eureka County hunters have been able to enjoy all types of hunting (big game, small game and bird) in their "own backyard". However, in recent years there has been a great influx of out-of-county hunters to Eureka County because of the abundant and diverse types of wild game. Residents of the county see the outside hunters as a perennial problem because statistics reveal that a very high percentage of the game harvested in Eureka County is killed and carried away by hunters who reside outside of the county. Some



bird hunting is closed to non-resident hunters. Because of the great influx of outside hunters each year to Eureka, White Pine, Elko and Lander counties, the State Fish and Game Department recommended a quota system, which was strongly criticized by the state's sportsmen. It was especially unwanted by Eureka County residents, who would, under the proposed system, be restricted to relatively few days of hunting per year in their own county. Eureka County residents strongly recommend that they be allowed to hunt in their own county the entire hunting season, with the out-of-county hunters being the ones subjected to the quota.

Stabilizing factors to community lifestyle and attitude for the Town of Eureka include the town's continuing role as county seat and primary population center, satisfactory transportation routes allowing acceptable mobility, and utilization of proximal lands for recreation, agriculture and ranching. The resident population of the town has increased the cohesiveness of its community through efforts to expand and renovate the town's historic character and promote tourism. As discussed by Ganzel (1976), the ranching faction of the community has a tendency to regard land use and traditional family mores as a reflection of lifestyle versus business related endeavors requiring an "outside-world" perspective. Townspeople directly affected by the effects and influence of the outside world economics and personal interface possess a stronger sense of outward orientation reflected by the greater acceptance of regional development, particularly mining.

Interviews additionally indicated a notable sense of community pride and regard for the Town's rich history, in addition to a strong regard for the community facilities and activities. Eureka County, at one time, was merely a rugged frontier inhabited only by Shoshone and Paiute Indians, except for the small settlements belonging to the Overland Stage. It was because of Eureka Town that the legislature, in 1873, created a new county. Eureka County came into being and the Town of Eureka became the county seat, born out of the richest ore deposit outside of the Comstock at that time. Eureka is still the county seat and its courthouse has been in continuous service since 1879. Eureka has established a well equipped health clinic, a new library and museum, a community pool and a dedicated and efficient volunteer



fire department. Social activities such as the week of annual rodeo competition, high school rodeo and Fourth of July Parade are held in special regard.

A coordinated Resource Management and Planning group (CRMP) and a Eureka County Planning Commission are effectively operating within Eureka County and the Town of Eureka. Following the announcement of EXXON's proposed project plans, considerable interest was and continues to be expressed by the members of the Eureka County Planning Commission to immediately begin planning efforts in coordination with EXXON that will emphasize transitional mitigation of any anticipated social and economics impacts upon the town or county. While the early stage of project initiation has somewhat limited extensive planning design (but for which this Technical Report is a major initiating component and mechanism), the effect of the member interests has been to significantly indicate the strong personal and community desires that industry development not be prohibited but thoroughly integrated into the existing community in as beneficial a manner as possible.

Generally, the overall attitude of the affected population toward mining and industrial development appears to be similar to that common to rural communities when confronted with potential rapid growth, major changes in services provision (short term, long term) and associated lifestyle changes as described by the Institute for Social Science Research (1974). The degree of resistance to change in Eureka County is anticipated to be somewhat different, however. The increased emphasis on development of the Towns "charm from by-gone days" and an increased number of in-migration residents fleeing urban environments has to some extent apparently created a wide divergence in perspectives toward local development of non-tourist industries. However, the Town's cultural and historical mining and dramatic population background may be expected to reflect a community more adaptable to social changes anticipated by project implementation.

Divergent attitudes of the community population have, additionally, to some extent been magnified by the economy of the 1980's. While the community as a whole appears to share a positive attitude toward developmental prescriptions and associated changes in lifestyle (e.g., land use, population increase, transportation efficiency, services capability, etc.), the level of acceptability



and tolerance for change varies significantly. Although local business people are anxious for the benefits of economic growth, newcomer groups "fleeing" urban environments together with some ranchers regard industry and mining developments as a potential source of highly negative impact. The perceived negatives may include over-population, shifts in status-quo politics and economic stature, and the potential for varying mores and lifestyles which industrial in-migrating populations are normally anticipated by some to represent.

In summary, residents of Eureka County have a deep attachment to their lifestyle and community. Many residents would like to see economic growth, but they wish this growth to be of a nature so that a careful blending into the old community takes place, and on such a scale that project-induced growth does not severely disrupt and overpower the community.

## 2.8 Community Services and Facilities

### 2.8.1 Schools

School services in Eureka County are planned and administered by the Eureka County School District. Although the district's boundaries are the same as the county's; it is politically independent of the county. As of 1983, the district operated three schools; one elementary (K-6), one middle school (K-8) and one junior/senior high-school (7-12). No colleges are located in the county. The elementary and junior/senior schools are located in the Town of Eureka; the middle school in Beowawe. The 1981 combined capacity of these schools was 419 students, 319 in the Town of Eureka schools. Because of the distance from Beowawe to Eureka (117 miles), 26 students (1983) from Pine Valley and Crescent Valley attend school in Carlin under an agreement with the Elko County School District.

Enrollment in 1980-1981 totalled 213 pupils: 107 in grades K-6, 86 in grades 7-12, and 20 pupils were provided special education service. The 1980-1981 enrollment represented a 7.6 percent increase from 1979-1980. Recent reduction in enrollments (170 pupils, 1983) has been attributed to recessionary migration out of the county (S. Molke, Eureka County School District,



Acting Superintendent, personal communication, 1983). In 1983, the Eureka junior/senior high school had an enrollment of approximately 80 students. Enrollment in grades K-6 in 1983 included approximately 80 students in Eureka and 17 in Beowawe (Grades 1-3 and 4-6 combined). Ten additional students are anticipated in Beowawe in 1984 due to the Cortez Mine operations (S. Molke, personal communication, 1983).

Total district expenditures for the period 1979-1980 equalled \$982,365, a per pupil basic support cost of \$4,961. The 1982-1983 basic support cost has been set at \$2,866 per student which translates to an actual per pupil cost of approximately \$7,000 (Eureka) and \$9,000 (Beowawe; small enrollment, under capacity enrollment) (S. Molke, personal communication, 1983). Total teaching personnel equalled 15 in 1979-1980 and 18 in 1982-1983 (average teacher/student ratio of 1:14.2 and 1:9.4, respectively). Two nonteaching personnel were employed during the 1980-1981 and 1982-1983 school years. In addition to payroll, district expenditures include housing support (11 mobile homes, 5 houses, 1983), library (approximately 6,400 volumes, 1981) and ongoing development of a sports complex. Salary payrolls have decreased from ranking first in the state to position nine as a result of budget cutbacks (S. Molke, personal communication, 1983).

Interscholastic sports and music at the high school are emphasized, with major transportation provided by a large converted commercial bus. The community population is highly supportive of scholastic sports and 4-H Club affairs (S. Molke, personal communication, 1983). The high school is active host to collegiate students (usually geology majors) during the summer when area surveys/study camps are conducted. Adult education night classes utilize high school facilities, particularly the ceramics equipment classroom. Vocational training is available utilizing well-equipped machine tooling facilities (S. Molke, personal communication, 1983).

Due to dispersed student populations, bus transportation costs represent a major budgetary and planning element. The school district owns sixteen transportation vehicles, nine of which are dedicated to bussing (9 to 55 passenger capacities). Bus routes commonly require one hour or more of transportation time (S. Molke, personal communication, 1983).



The school district owns limited acreage adjacent to both Eureka Town schools.

Elko County school services are planned and administered by the Elko County School District. The school district boundaries are the same as the county's, but the district retains political independence of the county. The district operates seventeen schools which break down as follows: six elementary, six middle schools, four junior/senior high schools and one vocational school. There is also advanced education at Northeastern Nevada Community College in Elko City which offers AA degrees (two-year) as well as vocational and technical programs. Total enrollment in 1980-1981 equalled 1,424. Vocational enrollment for the same year equalled 489.

Enrollments in 1980-1981 consisted of 2,081 students in the elementary and middle schools (grades K-6), 1,750 students in the junior/senior schools (grades 7-12) and 153 students in the vocational school (total students = 3,984). During the last three years district enrollment has equalled 3,902 (1981-82), 3,981 (1982-83) and 4,047 (1983-84 Feb. M. Kenley, Superintendent's Office, personal communication, 1984). The highest enrollment was 4,060 in 1973, which declined moderately over the next five years and then began to grow again from 1978 to the present.

In the City of Elko, the district has three elementary schools (K-6) and a junior/senior high school (7-12). Total Elko City enrollment in 1982-1983 approximated 2,664 students, more than 60 percent of the district's total.

The City of Carlin school facilities (K-12) enrolled 325 students (1981-82). While the schools in Elko are virtually at capacity, the schools in Carlin are below capacity by approximately 40 percent (230 students) as based upon 1981-82 school year data. Declining enrollments at the 98-student high school in Carlin had recently prompted a recommendation by the superintendent to close the Carlin senior high and bus the students to Elko (Total Enrollments: 289 (1982-1983) and 282 (1983-1984 Feb.)). This was met with severe criticism and resistance by Carlin residents.



Total district expenditures for the period 1979-1980 equalled \$9,507,139, a per pupil cost of \$2,606. The district's indebtedness of \$2.9 million (1981-82) was substantially below its \$32.9 million debt capacity. Total teaching personnel for 1980-1981 equalled 185 and non-teaching personnel equalled 31. Teacher recruitment for Elko or Carlin schools is not a problem, unlike recruitment for the rural schools in the districts.

#### 2.8.2 Health

Health care in Eureka and Elko counties is provided by a number of governmental agencies (federal, state and local). The national and local health entitlement programs, hospitals and mental health services for all individuals in the state are outlined below. The information has been abstracted from Nevada County Profile publications as prepared by the State of Nevada, Office of Community Services (1982).

Public Financed Health Care in Nevada has been estimated to cost each resident between \$275 and \$300 per year. This includes Medicaid (\$70 million annually), Medicare (\$105 million annually), as well as numerous categorical and discretionary programs. Federal health care expenditures in Nevada for fiscal year 1980 equalled \$143 million. State expenditures (FY 1980) equalled \$99 million.

Hospital Services are typically grouped into three areas: Primary, Secondary and Tertiary. The first two levels of care address health maintenance and treatment of illness through commonly available technologies. These may be distinguished as inpatient services. The highest level of care, tertiary, encompasses specialized services for which there is a limited demand (i.e., neo-natal intensive care, open-heart surgery, burn centers, etc.). Statewide bed totals equalled 833 secondary and 2,160 tertiary for a total 2,993 beds.



Mental Health Care is provided through five public institutional care facilities operated by the State Division of Mental Health and Mental Retardation. Short-term care is administered by the Nevada Mental Health Institute (102 licensed beds) and the Las Vegas Mental Health Center (65 licensed beds). Long-term mental health care (30 days or more) is generally provided to the severely mentally disabled and the profoundly retarded. Facilities for this type of care include the Desert Developmental Center (78 licensed beds), the Sierra Developmental Center (78 licensed beds) and the Eagle Valley Childrens Home (15 licensed beds).

The Division of Mental Hygiene/Mental Retardation provides services to rural residents through a Rural Clinics Program. Satellite clinics are located in seven of Nevada's communities. Examples of services typically provided include: inpatient services for treatment of psychotic, transitional care back to one's home environment, group and family counseling, children's services including diagnostic screening and substance abuse counseling and treatment.

There are approximately 50 separate entities in Nevada providing Substance Abuse Services. Roughly one-half of these receive federal funds through the State's Bureau of Alcohol and Drug Abuse (BADA). Programs available range from Detoxification Centers to long-term residential care.

In rural Nevada BADA partially supports six of the eleven agencies who provide alcohol and drug abuse services. During 1979-1980, BADA-supported programs demonstrated a 77 percent treatment completions rate.



Public Health services in rural Nevada are available through a community health nursing program in each county. The program is funded jointly between the state and the counties, i.e., 60 percent/40 percent respectively. Services typically offered include child health, communicable disease control, crippled children services, family planning, immunizations, tuberculosis control, and WIC - the food supplement program for low-income women and children. During fiscal year 1981, community health nurses reported a combined total of 40,550 clinical contacts.

WIC, the Women, Infant, and Childrens' supplemental food program is designed to assist children under five years of age and women who are pregnant, post-partum, and/or nursing. Individuals who are receiving assistance must be of low income and identified as "at nutritional risk". Food vouchers, nutritional screening and referrals to other appropriate services are provided. The program is administered by the State of Nevada's Department of Human Resources.

A statewide radio system for emergency medical communications for ambulances and hospital emergency rooms was implemented in 1978. The radio system utilizes the state microwave sites, as well as UHF sites added as part of the project.

Eureka County has no major medical facilities. Residents requiring hospital services normally obtain such care in the City of Elko, approximately 115 miles north. The Town of Eureka has an equipped health clinic and the state has secured a full-time resident doctor. In times of resident doctor absence, the state provides an assigned replacement. This state health care assistance is provided via the Nevada Rural Health Consortium. The county also maintains ambulances and a volunteer organization supplies licensed EMT ambulance attendants. Table 2-45 depicts typical health and medical expenses incurred by the county in fiscal year 1981-1983. Table 2-46 lists several of



Mt. Hope Molybdenum Project

Table 2-45 Eureka County Health and Medical Expenses Fiscal Year 1981-1982

Expense Category	Expenses
Rural Health Nurse	2,500
Home Health Care	1,700
Clinic	49,006
Ambulance <u>1/</u>	35,366
Indigent Medical	4,737
County Employee Insurance	49,778

1/ Includes purchase of new ambulance

Source: Eureka County Budget 1981-1982.



Table 2-46 Health and Human Services Utilized<sup>1/</sup> by Eureka County Residents

Program	Benefit	No. of County Recipients
Supplemental Security Income (SSI)	Monthly cash benefits to blind and aged, below or at poverty levels.	1 (June, 1981)
Food Stamps	Monthly coupons to low income persons, benefits value variable.	11 (June, 1981)
Social Security	Monthly cash benefits to disabled, retired and/or survivors of program covered individuals. Approx. 38 percent of state beneficiaries under 65 years.	117 (1979)
County Indigent	Funded by county revenues entirely, paid to eligible persons not qualifying for other state/federal cash entitlement programs.	10 (1980)
Vocational Rehabilitation	Services designed to assist disabled persons in obtaining meaningful work. Multiple services groups available. Number of county recipients right represent Nevada State Bureau of Vocational Rehabilitation data only.	10
Community Health Nursing	State/County funded (60 percent/40 percent, respectively), program providing nursing services, including child health immunizations, tuberculosis control, etc.	203 (1981)
WIC	Women, Infant and Childrens supplemental food program designed to assist low-income persons identified as "at nutritional risk" State administered.	11 (1981)
County Senior Center	Congregate and home delivered meals provided as well as variety of health/welfare services to aged and handicapped.	8,000 meals
Energy Assistance	Federally funded assistance to low-income persons.	25

<sup>1/</sup> Utilized term refers to availability of statistics.



the federal and state health and human services utilized by county residents. Table 2-47 lists licensed physicians, dentists and nurses for Nevada counties per 1,000 population (1981).

Elko County has one 58-bed hospital, Elko General Hospital, located in the City of Elko. Hospital services are primary and secondary only. In 1981, the county was estimated to have 18 doctors, 7 dentists and 140 nurses, most of whom were located in Elko. The county also maintains an ambulance service. The recently formed Rural Mental Retardation Region based in Carson City serves mentally retarded persons in Elko County. The City of Carlin has no medical facilities but operates an ambulance service. The City of Wells also operates an ambulance service and has a community health nurse. Long-term medical care (30 days or more) for the county is provided by Ruby Mountain Manor. The facility has 73 available beds and ran a 91 percent occupancy rate in 1980; the average revenue per inpatient day was \$31. Elko County health and medical expenses for FY 1981-82 are shown in Table 2-48 in addition to Elko General Hospital information (1980).

### 2.8.3 Law Enforcement

Law enforcement in Eureka County is provided primarily by the county sheriff's department and the county court system. The county sheriff's department in 1983 employed nine staff members; five sworn personnel and four civilian employees. Department operations are conducted from the County Courthouse located in the Town of Eureka. If land adjacent (behind) the Courthouse were required for expansion, it would have to be purchased from private ownership. The county has a Nevada State Highway Patrolman in residence.

Ratio of officers to population equals 4.2/1,000, a significantly low ratio but representative of the large county acreage and the distance between population centers at north and south ends of the county.

Although the sheriff's department estimates a requirement of two additional duty officers, which would increase the officer-population ratio, present budget constraints apparently will limit this expansion (B. Carlson, Sheriff and County Director of Emergency Management, personal communication, 1983).



Mt. Hope Molybdenum Project

Table 2-47 Licensed Physicians, Dentists and Nurses by County per  
1000 Population: 1981

<u>County</u>	<u>Physicians<sup>1/</sup></u>	<u>Dentists<sup>2/</sup></u>	<u>Nurses<sup>3/</sup></u>	
			<u>RN</u>	<u>LPN</u>
Carson City	2.217	0.531	6.2	3.0
Churchill	0.431	0.287	3.1	3.3
Clark	1.377	0.405	3.9	1.3
Douglas	0.978	0.463	1.6	0.4
Elko	1.042	0.405	4.1	4.2
Esmeralda	0.000	0.000	1.3	0.0
Eureka	0.834	0.000	1.7	0.0
Humboldt	0.636	0.318	2.8	1.4
Lander	0.245	0.000	2.9	0.5
Lincoln	0.536	0.268	3.8	0.8
Lyon	0.368	0.074	1.6	2.3
Mineral	0.643	0.161	3.4	2.1
Nye	0.221	0.111	2.1	0.6
Pershing	0.293	0.587	3.2	1.5
Storey	0.000	0.000	2.1	0.7
Washoe	2.500	0.692	6.1	2.2
White Pine	0.612	0.367	3.6	2.2
STATE	1.578	0.463	4.4	1.8

<sup>1/</sup> Figures from State Board of Medical Examiners, September, 1981.

<sup>2/</sup> Figures from State Board of Pharmacy, October 12, 1981.

<sup>3/</sup> Figures from State Board of Nursing, 1980.



Mt. Hope Molybdenum Project

Table 2-48 Elko County Health and Medical Expenses (FY 1981-82)  
and Elko General Hospital Information (1980)

Category	Expenditure
Public Health Nurse	\$ 48,337
Ambulance	84,626
Wells Medical Center	4,470
Substance Abuse	10,000
Hospital Capitol Improvement	31,102
Indigent Medical Fund	151,495
Employee Health Insurance	106,139

Elko General Hospital Information 1/

<u>Beds Licensed</u>	<u>Admissions</u>	<u>Length of Stay (days)</u>	<u>Occupancy Rate Percent</u>	<u>\$ Gross Revenues</u>
58	2,658	4.8	60.6	4,605,000

1/ Services provided are primary and secondary only.

Source: Elko County Nevada Profile, 1982.



The department's transportation and communication capabilities are generally adequate for the limited staffing (four vehicles). Staffing levels appear fixed although personnel turnover was high in 1983 (85 percent). The high turnover rate is assumed to be infrequent in nature primarily being associated with change in administrations.

Eureka County has two justices of the peace with jurisdiction in Beowawe and the Town of Eureka. The Seventh Judicial District, with three courts, includes Eureka, Lincoln and White Pine counties.

Law enforcement in Elko County is provided by the Elko County Sheriff's Office, the Elko Police Department, Carlin Police Department and the county court system. The county sheriff's department in 1982 employed 21 staff members; 18 sworn personnel and three civilian employees. The police department of Elko in 1982 employed 44 staff members; 33 sworn personnel and 11 civilian employees. The police department of Carlin in 1981 employed ten staff members; five sworn personnel and five civilian employees.

Ratio of police officers in Carlin to the city population equals 4.0/1,000. Ratio of police officers in Elko to the city population equals 3.7/1,000. Ratio of sheriff's department officers to total county population equals 1.2/1,000. Ratio of total law enforcement officers (county and city) to county population equals 3.4/1,000.

Elko County has eight justices of the peace with respective jurisdictions in Carlin, Eastline, Elko, Jackpot, Jarbridge, Mountain City, Tecoma and Wells. The Fourth Judicial District, with one court, has jurisdiction in Elko. There are also three municipal courts in the county. They are located in Carlin, Elko and Wells. The 21-man sheriff's department has its base of operations in the Elko County Courthouse.

#### 2.8.4 Fire Protection

Fire protection in Eureka County is provided by four volunteer fire departments and federal/state agencies. Federal agency involvement is dictated by respective jurisdiction over public lands, particularly the BLM, U.S.



Forest Service, and Division of Nevada State Forestry which provide varying degrees of support at each fire department. Response to fire situations is generally reciprocal between the county and forest services and, if requested, may include out-of-county activity (e.g., Lander County) (J. Todd, Eureka Volunteer Fire Department, personal communication, 1983).

The largest county volunteer department is the Eureka V.F.D. which registered 21 volunteers in 1983. Administratively based in the County Courthouse, the Eureka V.F.D. services one fire station with major equipment (state provided) including a 4-wheel drive 2,000-gallon tanker/pumper, 2.5 and 1.5 inch live lines, 750-gallon per minute (gpm) pack capability truck and one additional truck provided by the U.S. Forest Service. The Eureka V.F.D. is financed in large by city limit taxes. The fire insurance class rating, a commercial measure of system adequacy, is reported to be 7 or 8 (Todd, personal communication, 1983).

Located near the Town of Eureka (approximately 15 miles north), the Diamond Valley V.F.D. registers four to eight volunteers and services a fire station with major equipment entailing a 6 x 6 Forest Service 500-gallon pumper (D. Conway, Diamond Valley Volunteer Fire Department, personal communication, 1983). Staffing availability is dependent on agricultural commitments. Located within the McNary Fire District of the U.S. Forest Service, the Diamond Valley V.F.D. is financed by state, federal (BLM) and county monies. The Forest Service has provided the single truck and USFS performs most maintenance. Communication is via one-way Plectron radio.

Other county volunteer departments include Beowawe V.F.D. and Crescent V.F.D., neither of which service fire stations. The Beowawe V.F.D. registers four volunteers, Crescent V.F.D. registers one volunteer.

Fire protection in Elko County is provided by fullpaid fire departments, volunteer fire departments and federal/state agencies. Federal agency involvement, as in Eureka County, is dictated by respective jurisdiction over public lands, particularly the BLM, U.S. Forest Service and Division of Nevada State Forestry, which provide varying degrees of support and interaction at each fire department.



Elko County has 21 fire departments (19 volunteer departments and two paid departments) which enlist a total fire fighting force of 164 men and 22 fire stations. There are 30 paid firefighters and 134 volunteers.

The City of Elko has five fire stations with a 15-man paid force and a 13-man volunteer backup. The City of Carlin has two fire stations and a 15-man volunteer force. Table 2-49 lists Elko County fire protection facilities and manpower.

#### 2.8.5 Public Utilities and Communications

In 1980, the average Nevada Power Company residential customer used 1,187 kilowatt hours per month while the average Sierra Pacific Power Company customer used 615 kilowatt hours per month. This represented respective decreases of 25 percent and 12 percent over the peak residential customer use year of 1973.

In 1970, the total number of telephones in the state numbered 331,090. By March of 1981 an increase of 146.5 percent had brought the total count to 816,046. As seen in Table 2-50, telephone use in Eureka County for 1981 was the lowest in the state (422 phones; 0.05 percent of the state total). White Pine County accounted for 0.78 percent (6,374) of the state total and Elko County accounted for 1.6 percent (13,257) of the state total.

Nevada had 45 newspapers and publications with daily, weekly or monthly circulation, 22 AM radio stations, 19 FM stations and 9 television stations in 1980. Selected newspapers and publications are shown in Table 2-51 for Eureka and surrounding counties.

Eureka County is provided electrical services by the Mt. Wheeler Power Company (Southern Eureka County) and the Sierra Pacific Power Company (Northern Eureka County). Telephone service in Eureka County is provided by Nevada Bell (Nevada Telephone and Telegraph Company). Natural gas, propane and heating oil services are available to county residents from multiple companies based in Ely, White Pine County.



Mt. Hope Molybdenum Project

Table 2-49 Elko County Fire Protection

<u>Fire Department</u>	<u>Firefighters</u>		<u>Fire Stations</u>	<u>Major Equipment</u> <sup>1/</sup>
	<u>Volunteer</u>	<u>Paid</u>		
Carlin VFD	15		2	5
Clover Valley VFD	10			
Deeth - Starr	3		1	1
Dunphy	3		0	1
Elko FD	13	15	5	15
Independence Valley VFD	1		0	1
Jackpot VFD	10		1	3
Jarbridge VFD	3		1	2
Jiggs - Lee VFD	1		1	1
Lamoille	7		1	2
Metropolis VFD	1		0	1
Midas VFD	1		0	0
Montello VFD	5		1	1
Mountain City VFD	1		1	1
Ruby Valley VFD	3		3	3
Spring Creek	21		2	5
Twin Bridges	5		0	1
Wells	19		1	5
Wendover	9		1	3
Owyhee Indian Reservation VFD	3		1	2
Freeport Gold		15	0	0

<sup>1/</sup> Major equipment refers to the rolling stock of available firefighting apparatus, namely pumpers, tankers, rescue and emergency items and squad cars.

Source: State of Nevada, Office of Community Services, Elko County Nevada Profile, 1982



Mt. Hope Molybdenum Project

Table 2-50 Telephones in Use by County, for Selected Years: 1960 - 1981<sup>1/</sup>

<u>County</u>	<u>Dec. 1960</u>	<u>Dec. 1965</u>	<u>Dec. 1970</u>	<u>Dec. 1979</u>	<u>Mar. 1981</u>
Carson City	3,556	7,084	10,617	29,940	32,000
Churchill	2,670	3,664	5,117	9,387	10,097
Clark	55,735	118,261	196,165	485,644	505,413
Douglas	1,607	4,132	6,598	18,618	19,700
Elko	4,191	5,198	6,747	11,938	13,257
Eureka	153	170	174	325	422
Esmeralda	<u>2/</u>	<u>2/</u>	<u>2/</u>	396	498
Humboldt	2,092	2,843	3,331	6,138	6,944
Lander	410	659	1,056	2,506	2,931
Lincoln	673	863	960	2,181	2,438
Lyon	1,320	2,152	3,216	6,112	6,564
Mineral	2,088	2,283	3,026	3,659	3,785
Nye	806	1,643	2,102	8,584 <sup>3/</sup>	10,841 <sup>3/</sup>
Pershing	987	1,071	1,136	1,762	1,889
Storey	215	293	370	770	977
Washoe	45,103	72,059	86,109	179,930	191,916
White Pine	3,136	3,552	4,366	5,712	6,374
STATE	124,742	225,927	331,090	773,602	816,046

<sup>1/</sup> Includes all telephones, residential and business.

<sup>2/</sup> Data not available.

<sup>3/</sup> Figure includes Nevada Test Site.

Source: University of Nevada/Reno, Bureau of Business and Economic Research.



Mt. Hope Molybdenum Project

Table 2-51 Newspapers and Publications with Daily or  
Less than Daily Circulation: 1981

<u>City</u>	<u>County</u>	<u>Name of Paper</u>	<u>Daily-Paid Circulation</u>	<u>Less than Daily- Paid Circulation</u>
Austin	Lander	Reese River Reveille		455
Battle Mountain	Lander	Battle Mountain Bugle		1,700
Elko	Elko	Elko Daily Free Press Independent	3,495	2,600
Ely	White Pine	Ely Daily Times	2,517	
Eureka	Eureka	Eureka Sentinel		600
Wells	Elko	Wells Progress		850

Source: 1981 Ayer Directory of Publications, and 1981-1982 Nevada State Press  
Association Directory of Nevada Member Newspapers.



In the project area, Mt. Wheeler Power Company presently operates the Machacek Substation near the Town of Eureka. The Sierra Pacific Power Company owns a 230-kilovolt power line transecting the county east-west. In 1971, Mt. Wheeler and Sierra Pacific entered into contract providing Mt. Wheeler Power capacity rights of 40,000 kilowatts (KW) during the summer season (April through September) and 22,000 KW during the winter season (October through March). Subsequent power provision capacity was obtained through Mt. Wheeler's membership with the Intermountain Consumer Power Association (ICPA) whereby the Mt. Wheeler Power Colorado River Storage Project proceeded and resulted in an allocation of 22,000 kilowatt (KW) (summer season) and 12,800 KW during the winter season. Additional power supply planning, both in association with ICPA and independently, has included Mt. Wheeler Power Company participation in the Desert Generation and Power Cooperative which has purchased 100 megawatts (MW) in Utah Power and Light Company's Unit No. 2, Hunter Generating Station, Intermountain Power Project which will provide a 230-kv power capacity to Mt. Wheeler when constructed (proposed 1985-1986), and the White Pine Power Project which additionally involves another 230-kv power capacity from the 1,500 megawatt (MW) plant proposed for operation in mid-1989.

Telephone service in Eureka County is anticipated to generally remain as of present although limited expansion and upgrading continues as an ongoing yearly activity (D. Pastorino, County Commissioner, personal communication, 1983).

Television service is provided by the Eureka T.V. District which is funded through a county tax. A relay transmitter located on Prospect Peak operating at full capacity relays major networks from Salt Lake City and Nevada (via Ely and Elko-Reno, respectively). Two radio stations (FM) are additionally relayed via the T.V. District. One newspaper, The Eureka Sentinel, is published weekly in the Town of Eureka and is the main source of local and regional printed news with an estimated weekly circulation of 600. Several major daily newspapers routed from Ely and Elko are also available in the Town of Eureka.



Elko County receives most of its electrical energy from Sierra Pacific Power Company (services county-wide) and Wells Rural Electric Company. Other suppliers in the county include Idaho Power Company, C. P. National and Raft River Rural Electric Cooperative. C. P. National receives all of their electricity for resale from Sierra Pacific Power Company. There are some areas which have no electrical service and must generate their own electricity using diesel generators. Wells Rural Electric Company supplies the electrical needs of consumers throughout much of central Elko County. Telephone service for Elko County is provided by Cal Pacific Telephone Company. Natural gas, propane and heating oil is available to all county residents by seven suppliers: Southwest Gas Company (natural), C. P. National (natural), Par Gas, Wells Propane, Chevron, Arco and Continental Oil. Southwest Gas Company supplies natural gas to the communities of Carlin and Elko. The company also has authority to service areas within one mile of its main pipeline. Natural Gas is available only in the more urbanized areas. Consumers in outlying areas must rely on electricity, liquified petroleum gas (LPG), or other petroleum products to satisfy their energy demands. Television service is provided by the Carlin T.V. District and Elko T.V. which are funded through a county tax. A local AM radio station (KELK) is located in Elko with an operating frequency of 1,240 kilohertz (khz) and effective radiated power (watts) of 1,000/day and 250/night. Two newspapers are published in Elko, the Elko Daily Free Press (daily) and the Elko Independent (weekly). The Wells Progress is also published weekly out of Wells. Circulation data for the newspapers are shown in Table 2-51.

#### 2.8.6 Water and Wastewater

Dependent on location, Eureka County residents are reliant upon county-provided water and wastewater services or on independent means. The county supplies water and sewer services to the Town of Eureka residents. Some town residents retain independent well-water supply systems. Major water services in the county are provided by the Crescent Valley Water System (Crescent Valley service area - 1980 population served, 90) and the Eureka Water Assistance System (Eureka County service area - 1980 population served, 450). Major wastewater services are limited to that provided by the Eureka Wastewater Treatment Facility (1980 population served, 475). Residential and



commercial water use in 1982 equalled approximately one million gallons per month (L. Fiorenzi, Eureka Town Public Works Department, personal communication, 1983).

Due to a shortage of water supply capacity, a moratorium on new water connections existed during the period 1980-1982. System improvements during the period 1982-1983 have resulted in a cessation of the moratorium and include the addition of two additional wells. A 300,000 gallon storage tank is under construction (April, 1983) and the distribution system is additionally undergoing partial improvement. Some undersized mains result in difficult fire flow capacity maintenance.

The Town of Eureka sanitary sewage collection system was constructed in 1981; the associated sewage treatment lagoons were designed for a 50-year life, base population level of 450 with four percent annual increase. Evaporation and percolation lagoons represent the principal wastewater treatment system components.

Elko County residents, depending upon location, are reliant upon county/city provided water and wastewater services or on independent means. Major water services in the county are provided by Carlin Municipal Water (Carlin service area - 1981 population served, 2,100); Elko City Water Supply (Elko service area - 1981 population served, 10,000); Spring Creek Utilities (Spring Creek service area - 1981 population served, 1,200) and the Wells Municipal Water Department (Wells service area - 1981 population served, 1,250). Major wastewater services are limited to those provided by the Carlin Wastewater Treatment Facility (Carlin service area - 1981 population served, 1,400); Elko Wastewater Treatment Facility (Elko service area - 1981 population served, 9,600) and the Wells Wastewater Treatment Facility (Wells service area - 1981 population served, 1,250). The Elko City water and sanitary sewer system are both presently reported at capacity. The Carlin water system reportedly has sufficient capacity to support a population of 3,000 to 4,000, although storage is currently near capacity. Water usage for the communities (by average gallons per person per day) are reported by the Desert Research Institute (1975) as follows:



Elko	- 385
Mountain City	- 220
Carlin	- 220
Wells	- 260
Lamoille	- 300

#### 2.8.7 Solid Waste

Organized solid waste disposal in Eureka County is primarily limited to use of authorized landfill areas on BLM lands. The county operates and maintains a 40-acre landfill 2.5 miles north of the Town of Eureka. Additional landfills exist in Diamond Valley (county road department maintains), Crescent Valley and Beowawe. Collection service in the Town of Eureka is provided primarily by the county.

Organized solid waste disposal in Elko County is limited to use of authorized landfill areas operated/owned under the administrative services of Elko, Carlin, Wells and the BLM. The BLM major landfill site is located outside of Jackpot (extreme northeastern Elko County) and serves a population of approximately 1,000 (1981). The three major city landfills are all located outside of their respective cities. The landfill sites of Carlin, Elko, and Wells serve a population of 1,300, 9,000 and 1,200, respectively (1981).

#### 2.8.8 Community Facilities and Recreation

Eureka Town residents have recently focused interest in developing and encouraging renovation of the town. This has prompted multiple projects directed toward attracting resident participation and increasing the level of personal satisfaction with life in the area. As in the past, the County Courthouse remains the focal point of town gatherings dealing with community planning and community affairs. The community facilities existing within Eureka County are predominantly located in the Town of Eureka. These include in part a county swimming pool for summer use (constructed 1977), the Eureka Sentinel Museum, Eureka County Branch Library (1982, service provided under contract with Elko County), Eureka County School District Library (6,350 volumes held), community park, school play area, outdoor tennis court, rodeo



arena and U.S. Post Office. The school district is presently constructing a sports complex which is expected to provide public use opportunity. There is a Senior Citizens Center which serves hot lunches daily and offers transportation for the elderly and handicapped to Ely and Elko. One R.V. park is located in south Eureka and five motels/hotels (approximately 50 rooms) are located in downtown Eureka. There are two regional/county parks and 30 campsites within the county. The Eureka Airport (located 6.5 miles north of Eureka) has a paved runway, tie-down area and public phone booth to serve private and charter aircraft.

Five churches are located in the area of the Town of Eureka: Catholic, Church of Latter Day Saints, Episcopal, Presbyterian and Baptist. More than a dozen community service and special interest organizations function in Eureka Town, as well as several federal and state agency offices (see Table 2-52).

Elko County has considerably greater community facilities and recreational attractions than Eureka County, mainly due to overall population and the City of Elko's position as a regional trade center. Elko is located approximately midway between Reno (289 miles) and Salt Lake City (237 miles) on recently completed I-80. The City of Elko also serves as a tourist base for campers, hunters and fishermen visiting the nearby Ruby Mountains Scenic Area. Approximately 1,300 motel rooms exist in the city with a new 150-room casino. Retail shopping is concentrated in an active downtown business district. While lacking major department or discount stores, three banks and two savings associations have branch offices in the city. The city/county airport (undergoing expansion) is served by United Airlines as well as commuter, charter services and private aircraft (1983).

Also located in the City of Elko is a new convention center with a 926-seat auditorium and six meeting or exhibition rooms. A county library holds approximately 39,000 volumes and is supplemented by 33,000 additional volumes at Northeastern Nevada Community College. The City of Elko also has four city parks and a city golf course. The county maintains and operates fairgrounds in the city. The Northeastern Nevada Museum is located in Elko. On a county-wide basis, there are 295,000 square feet of playground areas,



Mt. Hope Molybdenum Project

Table 2-52 Federal/State Agencies<sup>1/</sup> and Community Organizations in the  
Town of Eureka

---

Federal and State Agencies

The Soil Conservation Service - Federal USDA  
Agricultural Stabilization and Conservation Service - Federal USDA  
Bureau of Land Management - Federal USDI  
Farmers Home Administration - Federal USDA  
State University Extension Service, Eureka County - State Agency  
Nevada Fish and Game - State Agency  
Eureka Conservation District - State Agency

Organizations

Masons Iphigenia - Order of the Eastern Star  
Odd Fellows - The Rebekahs  
Knights of the Pythias - Pythian Sisters  
Veterans of Foreign Wars Post No. 8194  
American Legion Auxillary No. 20  
Eureka Volunteer Fire Department  
Emergency Medical Services Council  
The Lions Club  
Diamond Valley Homemakers  
The Historical Society of Eureka  
The Friends of the Eureka Branch Library  
Eureka County Farm Bureau  
Future Farmers of America  
4-H  
Nevada Cattlemens Association  
The Eureka County Fair Board  
Simpson Creek Muzzle Loaders  
Eureka High School Rodeo Club  
The Eureka County Roping Club

---

<sup>1/</sup> Offices or local committees in Eureka

Source: A Guide to Eureka (Hoekenga, 1983).



885 acres of snow-play areas, 11,619 square feet of swimming area, 12,495 acres of fishing lakes, 35 linear miles of fishing streams and seven linear miles of hiking/walking trails. There are also two boat launch ramps, 100 boat slips, four swimming pools and 2,881 picnic/camping facilities (191 picnic tables, five group picnic areas, 1,218 campsites, 1,278 tent/vehicle/trailer campsites and 385 hook-up campsites). Table 2-53 lists community services, outdoor sport facilities and parks in Elko County.



Mt. Hope Molybdenum Project

Table 2-53 Community Services, Outdoor Sport Facilities and Parks  
in Elko County

---

<u>Community Services</u>	<u>Total</u>
Churches	26
Motels/Hotels	43
(number of rooms)	(1,659)
Service Organizations	105
Fraternal Organizations	59
Theaters (movie-includes indoor & outdoor facilities)	2
Bowling Establishments	3
Museums	1
 <u>Outdoor Sport Facilities</u>	
Baseball/Softball Fields	10
Tennis Courts	10
18-Hole Golf Courses	2
9-Hole Golf Courses	2
Golf Driving Range Positions	10
Basketball Courts	4
Hand/Racquetball Courts	1
Horseshoe Pits	1
Archery Lanes	4
 <u>Parks</u>	
School Play Areas	11
Neighborhood/City	9
Regional/County	3
National	17

---

Source: Elko County Nevada Profile, 1982.



CHAPTER 3.0  
IMPACT ANALYSES

3.1 Introduction

Implementation of the proposed action and alternatives would result in significant impacts, both beneficial and detrimental, to the existing socioeconomic environment. Categorized in the following discussion by action component (i.e., subdivision (proposed action) dispersed personnel case (alternative 5-B), and the no action alternative), the analysis of potential socioeconomic resource impacts was conducted with an emphasis on the following major criterion of effects:

- 1) Population - extent of change in status; associated impacts upon subsistence and non-subsistence factors (e.g., housing and recreation, respectively).
- 2) Employment and Income - extent of change in status relative to industry type and income generation percentage; associated distribution of incomes, effect upon employment base status relative to direct employment opportunities and indirect demographic alterations.
- 3) Housing - extent of housing need and capability of local resources to respond; effect of housing scenarios potentially developed relative to public finance, schools, and community facilities/services; and consideration of potential for "boom town syndrome" relative to housing type distribution.
- 4) Local Government and Public Finance - quantification and distribution effects of revenues/expenditures; budget analyses - deficits, surpluses.
- 5) Attitudes and Lifestyles - extent of changes to present status.



- 6) Community Services and Facilities - extent of capability resource base to accommodate project demand; potential for mitigative measurements; service level adequacy.

While other potential impacts may be identified, some of which are included in this Technical Report, the above listed points of emphasis represent the items of significant concern brought forth during EIS public scoping meetings and various agency communications.

Pertinent assumptions and certain guidelines to analysis of impact specific to the proposed action are listed in Section 3.2. Section 3.3 presents a detailed summary of the assumptions, analysis guidelines and methodologies utilized to perform the socioeconomic impact analyses. Results of the impacts analyses are presented by alternative and individual socioeconomic factor (e.g., Proposed Action: Population, Employment and Income, Housing, etc.) in Sections 3.4 through 3.6.

Implementation of the no action alternative would generally negate the occurrence of impacts herein associated with the proposed action, but would correspondingly result in certain alterations of the socioeconomic environment.

### 3.2 Assumption and Analysis Guidelines

The determination of environmental impacts upon the socioeconomic resources base required that certain assumptions be made which would affect conclusions regarding significance of impact and nature of impact (beneficial/detrimental). Project-specific assumptions used in the analyses are presented below.

1. It was assumed that the proposed action and alternatives, particularly the employment requirements anticipated by EXXON, described briefly in Chapter 1.0 of this Technical Report and in detail in Chapter 2.0 of the EIS and Technical Report No.1 would be implemented as described. Mitigation measures described in the EIS would be in place at time designated and as described. Assumptions 2 through 16 below highlight particularly important



aspects of the proposed action and alternatives described, as related to socioeconomic resources.

2. It has been assumed that the following employment requirements would be associated with the proposed action:

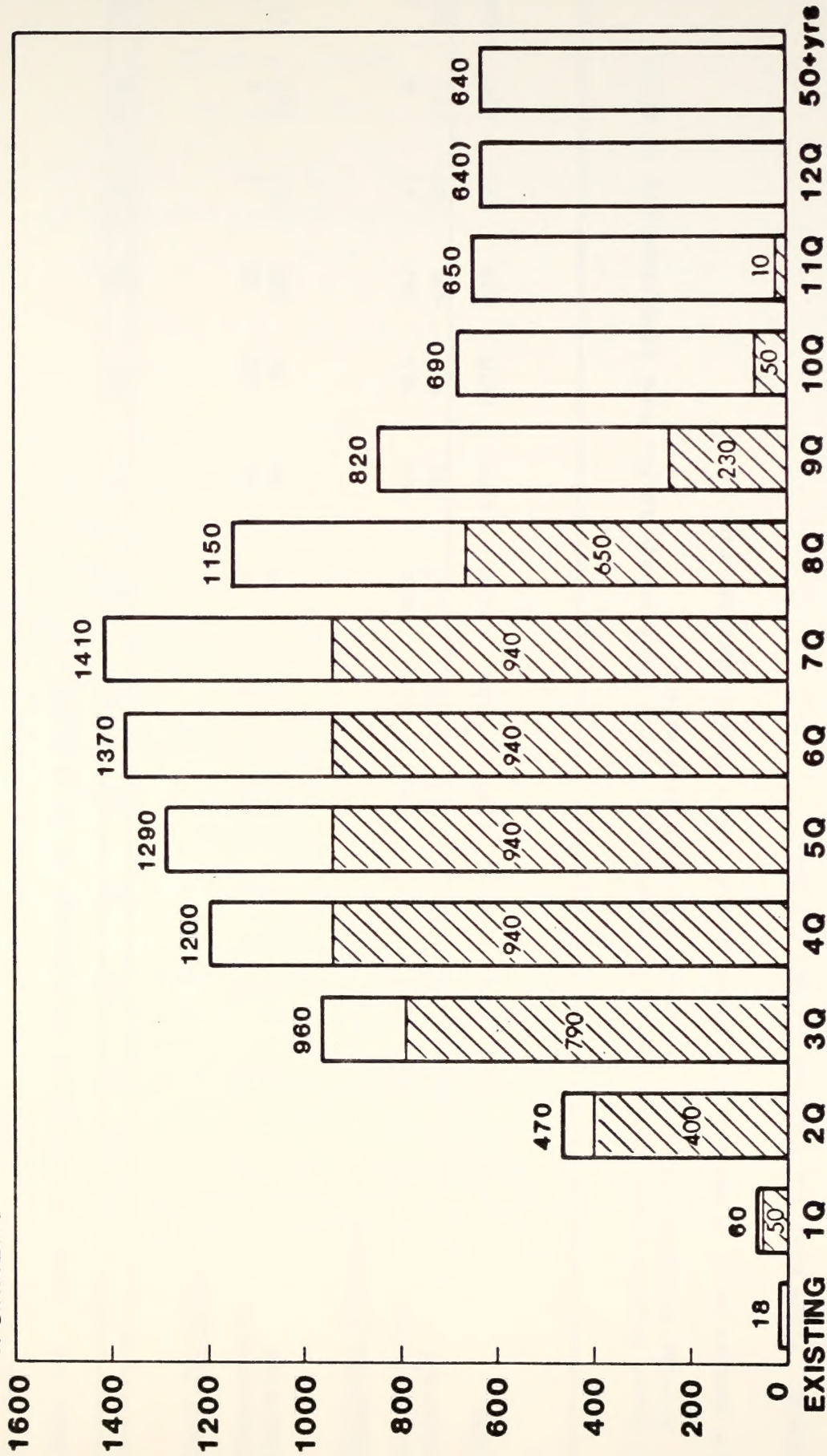
The workforce associated with construction and operation is shown in Figure 3-1. The construction workforce would peak at approximately 940 people midway through the three year construction period. The operational workforce would grow steadily and level off at an estimated 640 employees. EXXON has stated that estimating the distribution of jobs is extremely difficult and highly subjective due to the dynamic nature of population. For the purposes of worst-case impact analysis, the distribution of permanent jobs between local people and those that would migrate to the area (non-local) has been assumed to be that shown in Table 3-1 (the basis of assumption being discussed in Section 3.3). Estimated skill mix of the operational labor force is shown in Table 3-2.

3. For the purposes of impact analysis, a single proposal for housing of construction workers was assumed appropriate. Specifically:

- A 450-unit camp would be built near the mine to house single and single-status personnel. It would be constructed of modular units for rooms, mess hall/kitchen and other buildings. The workers would be housed one person to a room and would be provided three meals/day, maid service and a recreational program. EXXON would provide for water supply, sanitary facilities, road access and electric power.
- A 415-space, 50-acre recreational vehicle park would be developed near Eureka or near the mine/process plant to house married or single workers who own mobile homes or campers. The park would include a sanitary system, water supply, streets and off-street parking. At the end of construction, if located near Eureka, it may be



# WORKERS



Construction Personnel = 940

Operation Personnel =

Q = Quarter Year (3 months)

SOURCE: EXXON MINERALS COMPANY

MT. HOPE MOLYBDENUM PROJECT

## TOTAL WORKFORCE ESTIMATE

U.S. Department of the Interior  
Bureau of Land Management

FIGURE 3-1



Mt. Hope Molybdenum Project

Table 3-1 Local and Non-Local Distribution of Total Workforce

	Existing	1Q	2Q	3Q	4Q	5Q	6Q	7Q	8Q	9Q	10Q	11Q	12Q
<u>Local Personnel 1/</u>													
Construction	2	5	40	80	94	94	94	94	65	23	5	1	0
Operation	--	4	12	30	47	63	78	84	90	106	115	115	115
<u>Non-Local Personnel</u>													
Construction	14	45	360	710	846	846	846	846	585	207	45	9	0
Operation	2	6	58	140	213	287	352	386	410	484	525	525	525
TOTAL	18	60	470	960	1200	1290	1370	1410	1150	820	690	650	640

1/ Local Personnel are defined as workers currently living close enough to Mt. Hope (approximately 90 miles driving distance) so as not to require housing provisions.

Q = quarter year, 3 months; 3Q = third quarter, 4Q = fourth quarter, etc.

SOURCE: EXXON Minerals Company and WRC EIS Team



Mt. Hope Molybdenum Project

Table 3-2 Estimated Skill Mix of Operational Workforce

Skill	Number
Management/Professional Staff	130
Clerical	34
Technicians	39
Shovel Operators	16
Heavy Equipment Operators	127
Drillers/Blasters	14
Mechanics	104
Welders	18
Electricians	20
Machinists	4
Millwrights	28
Process Operators	53
<u>Other</u>	<u>53</u>
Total	640

SOURCE: EXXON Minerals Company



converted to a permanent 210-lot mobile home subdivision to house operational workers.

- Limited number of hotel/motel rooms in Elko or Eureka may be retained to supplement housing provisions.

The following factors were considered by EXXON to be appropriate for defining the general criteria of construction housing: 1) vacancy rates, reportedly low, 2) overlap of operating and construction jobs is such that permanent housing cannot be prematurely built to temporarily house construction workers, 3) short duration and remote location is likely to attract a large number of single workers, and 4) a desire to minimize disruption to existing communities.

4. For the purposes of impact analysis, two alternatives, decentralized workforce (Case 5-B) and an EXXON-assisted subdivision (proposed action, Case 5-A) have been assumed appropriate. The proposed action and alternative have been chosen in keeping with the CEQ guidelines and allow for a "worst-case analysis." This "worst-case analysis" brackets impacts in that opposite, extreme situations, i.e., maximizing projected impacts to Eureka versus maximizing project impacts to other communities, can be evaluated.

The actual housing development scenario would lie somewhere between the two alternatives identified, and the socioeconomic impacts would be less than those presented in this Chapter.

(In order to avoid undesirable speculative purchase of real estate and disruption of existing communities in the Mt. Hope area, care has been taken to avoid showing potential locations of subdivision sites. This omission does not affect the ability to perform an accurate socioeconomic impact analyses).

- Details of Proposed Permanent Housing. Under the proposed action, EXXON would assist in the development of a subdivision. The subdivision housing would be available on a



free choice basis to employees. The subdivision may be located near the mine/process plant or the Town of Eureka.

This subdivision would require approximately 150 acres of land (200 acres if the 415 unit RV park previously discussed is included). Private ownership of the land required has been assumed. Single family dwellings, multifamily dwellings and mobile home lots would be provided in proportion to anticipated demand from non-local workers. It has been assumed on the basis of EXXON estimations that the mix of unit types would be approximately equal to the mix of net housing additions in Eureka and Elko counties over the period 1970-1980. During that period, single family dwellings accounted for 32 percent. Mobile homes represented the balance, or 44 percent, of net housing additions.

The construction of a variety of single family housing sizes, types and styles has been assumed on the basis of EXXON plans to date. Multifamily units have been assumed to be garden style apartments of modular construction, including studio, 1, 2 and 3 bedroom units. Consistent with county requirements, the new subdivision would include adequate parkland dedication and improvements. If sufficient retail services have not been conveniently provided by others, it has been assumed per EXXON plans that the new subdivision would also include land for 10,000 to 20,000 square feet of retail construction to meet residents' needs. The space provided would be adequate for such uses as a small grocery store, laundromat, hair stylist, dry cleaner, variety store, auto service, etc.

- Details of the Decentralized Workforce Housing Scenario.  
Under this alternative, the decentralized workforce housing



scenario, it has been assumed that non-local workers would distribute themselves among the existing communities of Eureka, Carlin and Elko as fits their individual desires (See Section 3.4 for basis of assumption). For the purposes of impact analysis, the distribution of the non-local permanent workforce (total 525 employees) has been assumed to be the following: 356 employees locating with the Town of Eureka and vicinity, 128 employees locating in Elko City, and 41 employees residing in Carlin. This alternative does not involve consideration of an EXXON-assisted subdivision.

Several specific assumptions related to project plans and used in the evaluation and analysis of potential socioeconomic resource impacts are discussed in the following section.

### 3.3 Methods of Analysis

#### 3.3.1 Introduction

In the issuance of a forecast of any sort there are a series of assumptions and constant factors which are utilized upon which the forecast is based (e.g., for the socioeconomic and fiscal impact analysis of the proposed action, a primary factor was the projection of populations of Eureka County and its environs approximately fifty years into the future). The forecasting of socioeconomic conditions, with or without the consideration of a major contributory factor such as that represented by the proposed action, particularly relies upon the establishment of certain initial assumptions. Additionally, the establishment of assumptions is particularly unique in the field of socioeconomic concerns in that the characterizing components of the baseline, e.g., population levels and distribution (demographics), housing, income, employment, etc., are especially dynamic. Frequently, the data base relevant to status-quo lags the present year by two, three or more years, particularly in areas undergoing limited censusing.



On the basis of the assumptions initially established for analytical purposes and the characterization of the status quo, a mode of analysis must be selected to suit the objectives of evaluation. Whereas, a particular study effort may be fulfilled with optimistic projection methodologies, a conservative method of analysis best suits an EIS evaluation to assure an objective, if not pessimistic, analysis. Whichever methodology of analysis is eventually selected for implementation, the evaluation of socioeconomic projections must be accompanied with a clear understanding of the basis of the projections, conservative or optimistic.

As such, the following presents the basis of assumptions relevant to the individual impact projections. The detailed discussion is justified in that the basis of assumptions are unique to the Eureka County socioeconomic environ, most particularly a result of updated data and comparisons with existing projections (e.g., HDR, 1980; Bureau of Business and Economic Research, UNR) which resulted in a determination that the unique projections were required to adequately assess current status quo relative to potential impact.

It should be noted that although the discussion of assumptions additionally includes the reporting of some of the results led to by incorporation of the assumptions into the analysis, the results of the analyses conducted are individually presented by socioeconomic component and alternative in Sections 3.4 through 3.6

### 3.3.2 Assumptions

A special note of importance must be defined regarding all assumptions and results of the socioeconomic impact analysis. Although project timing remains uncertain, a decision was made to base the analysis on a third quarter, 1984 project start-up date in order to limit the degree of analytical extrapolation from current year data which would be required if project start-up were set at a later date (i.e., 1988, 1990, etc.). Excessive extrapolation from the data base years available (for the most part 1980-1982) would diminish accuracy of projections. It must be stated that the 1984 basis of project start-up is only an arbitrary establishment of date and that EXXON has expressed



no specific date for start-up operations. All costs are expressed in 1982 dollars.

#### 3.3.2.1 Population - Housing

As previously mentioned for example purposes, a primary factor in analysis of socioeconomic conditions was the projection of Eureka County population approximately 50 years into the future. As will be described in the latter part of this subsection, the problem was essentially divided into two parts: 1) populations directly hired by the mine and process plant operations; and, 2) secondary populations produced as a result of the increase in economic activity associated with the mining activity. The importance of the population projections is immediately evident since nearly all other segments of the impact forecasts are based on the expected population fluctuations and distributions. Nearly all revenues and expenditures are based solely on population with the exception of revenues derived directly from the mine. Consequently, all considerations of housing, school rooms, streets, hospitals, public services, and available water supplies relate to the original population forecast.

The relationship between the projected population and other elements of the forecast was derived by reviewing the past records and budgets of entities at the local and regional levels. In addition, it was also necessary to compare the influence of other similar economic developments to gain an insight into the impact of the proposed action development on the local populations. The comparison was also helpful in assessing any planning activity, or lack thereof, that may have been associated with the new development.

Once population projections and related elements were fixed, the next crucial step involved choosing an analysis which best represented the type and quantity of data that had been gathered. There is no one analysis or method which is particularly better than another in every case. In some instances, simple comparisons and linear projections may be just as effective as more complex statistical routines which may tend to obscure a relatively obvious observation. The analyses conducted for this EIS effort utilized a combination of sources and methods which were designed to produce results as accurately and objectively as possible.



Mine/Process Plant Employment. The manpower requirements during the start-up phase of the mine were fixed at 940 construction workers and 640 operations employees. Non-local hires among these groups were fixed at 90 percent of construction employment (846 persons) and 82 percent of operations employees (525 persons). The high percent of non-local (living beyond a 90 mile driving distance from Mt. Hope and requiring housing provisions) was established by review of the relatively low labor force available in Eureka County, the labor skill requirements established by project design, and a limiting of reliance upon other area mining labor (i.e., present employed mining personnel would generally not exchange place of employment as EXXON does not anticipate significant differentials in employment benefit relative to labor income (EXXON EIS Team, personal communication, 1983)). Peak employment for the construction workers occurred in the period between the second quarter of 1985 through the first quarter of 1986 and then declined to none by the end of the first quarter of 1987 (Figure 3-1). A maximum combined employment level of 1,410 employees was projected for the first quarter of year 3 with a steady decline thereafter to a stable 640 operations personnel by the second quarter of year 4.

The household populations of construction workers of non-local origin were limited by the expected employment of 50 percent of their number as single men or men accepting single status (EXXON Minerals Company and WRC EIS Teams estimation). The remaining 423 construction workers with dependents were assumed to entail a total married population of 1,309 of which 20 percent or 262 were considered to be of school age at the peak level of employment (School age of 20 percent consistent with historic data, Chapter 2.0). It was assumed that there would be 1.1 workers per household (e.g., husband/wife, parent/child, etc. housing employment combinations), resulting in a total household demand of 385 units with 3.4 persons per household.

The household populations of operations personnel of non-local origin were limited by the expected employment of 20 percent of their number as single persons (EXXON Minerals Company and WRC EIS Team estimation). The remaining 80 percent with dependents were expected to have 1.3 persons per family which were workers, resulting in a total of married personnel of 420 within 323 households. For this classification, there would be 3.5 persons



per household for a total of 1,131 persons considered married with dependents. The school age children for this group were fixed at 20 percent or 226 total school age children.

The total number of required households, for both single persons and married personnel established the relative level of demand for housing among the operations personnel. Their further classification by EXXON project planners, according to professional or labor categories, identified the relative kind of housing (i.e., single family, apartment, etc.) demand by type which was generalized in the following distributions: 24 percent single family, 32 percent apartment and 44 percent mobile home. This breakdown was applied to all locations at which mine/process plant personnel might seek to live, including the proposed action subdivision.

Generated Populations and Employment. Regional spending by construction and operations personnel of the mine/process plant was expected to generate new employment (Non-EXXON businesses) and induce non-local job seekers to enter local communities. The amount of generated employment was calculated to correspond to the spending habits of the mine/process plant personnel stated below as percentages of generated employment relative to mine/process plant employment.

	<u>Single</u>	<u>Married</u>
Professional Local	10.0	20.0
Professional Non-local	12.5	25.0
Labor Local	5.0	10.0
Labor Non-local	7.5	15.0

The maximum levels of employment generated by construction workers would be expected to occur in the period between the third quarter of year 2 and the first quarter of year 3 when 157 persons of local origin were employed. Peak levels of generated employment, arising from operations personnel, was fixed at 230 persons which would occur during the last two quarters of 1987. The combined peak of 299 persons in generated secondary employment would be expected to occur in the second quarter of year 3. In this same quarter, combined populations of construction, operations and generated personnel would



reach the maximum level of 3,247 persons in all households.

The projection of generated secondary employment, as described above, included the effects of local hires for construction and operations, as well as those of the non-local employees. Local hires, therefore, contributed to generated secondary employment, and to the demand for housing occasioned by generated employment; however, local hires did not affect the level of demand for housing. Generated populations arose (as a percentage of mine/process plant and construction personnel) in the quarter following the trigger level of mine/process plant and construction personnel. That is, as each quarter produced a new higher level of direct hires, it was in the following quarter that new numbers of secondarily employed arose. Moreover, as they rose, their numbers were subject to a two quarter rolling average of the preceding and present quarter.

This slower initial response, and subsequent slower phase-out response as construction activities subside, was consistent with the time involved in absorbing locally unemployed labor and attracting the non-local labor pool initially and with allowing the peak number of construction workers to slowly diminish as construction activity terminated. The non-coincident peaks of construction and mine/process plant employment therefore, produce generated secondary employment of the following order:

Quarter	<u>Year 2</u>				<u>Year 3</u>				<u>Year 4</u>		
	1	2	3	4	1	2	3	4	1	2	3
Percent of Generated Employment											
Construction	63	92	100	100	100	84	47	15	7	3	0
Direct Hire											
Professional	15	35	50	61	73	81	85	92	100	100	100
Labor	4	15	29	44	58	68	73	83	95	100	100



The locational distributions of generated secondary employment were estimated to correspond as follows: 75 percent to the area of residence of the direct hire and 25 percent to the nearest large town. This distribution was intended to reflect the place and amount of spending by the direct hire. For example, if located in Eureka, 75 percent of the spending would take place in Eureka and 25 percent in Elko, causing a subsequent 25 percent increase in secondary employment in Elko and a 75 percent distribution in Eureka.

Housing Demands. On the construction site, during initial development (years 1 and 2) of the mine/process plant (proposed action or Alternate 5-B), there would be a 385-unit recreational vehicle (R/V) park to house married members of the construction crew and a 423-unit man camp which would house approximately 50 percent of the total construction employees hired on single status. The estimated value of the R/V park was set at \$2.4 million or \$6,234 per unit. The man camp was valued at \$7 million or \$16,548 per unit. A local Eureka County ad valorem tax rate of .00748/dollar was applied to each type of property at quarterly rates of .00187/dollar through the 12 quarter start-up period, based on the number of units occupied and assuming the construction of the facilities occurred on an as needed basis. As construction activity declines and living units vacated, ad valorem taxes were continued through the first quarter of year 3 at full value which was computed at 35 percent of assessed value multiplied by the tax rate. The tax was discontinued in the second quarter of year 3 as a result of the presumed disposal of the units by sale, grant or conversion to another use. (It should be noted that the living units could be expected to continue generating revenues beyond year 3 depending on their disposition.)

Mine/process plant operations and generated employee housing demands were first calculated by the numbers of families (including single employees) stated as households; then by geographic location under the proposed action Case 5-A and the Decentralized Workforce Case 5-B; and finally according to the nature of their anticipated demands for single family units, apartments or mobile homes. The housing distribution was projected on the basis of historical data at 24 percent single family, 32 percent apartments and 44 percent mobile homes for all locations. Using the respective market values



of \$75,000, \$35,000 and \$35,000 (WRC EIS Team estimation of pricing); 35 percent of assessed value; and the ad valorem tax rates of .00748/dollar for Eureka and .01176/dollar for Elko, total tax revenues were calculated annually as incurred. The quarterly rates and revenues were taken at one-fourth the annual level. At the time when the ad valorem revenues were introduced into the additive sums of all taxes paid, they were lagged one year in order to reflect the actual collection dates most accurately. The households included in the ad valorem property tax figures were those of all non-local mine/process plant operations employees and generated secondary employees according to household location.

### 3.3.2.2 Revenues - Expenditures

Mine/Process Plant Tax Revenues. Tax revenues generated directly by the mine/process plant activities included sales taxes paid on equipment and supplies during construction and operations between year 1 and the year 35; ad valorem taxes paid on the mine/process plant property itself; and net proceeds paid throughout the same period. Extended forecasts beyond the 35-year period (1984-2018) were set at the year 35 levels and not subjected to further extrapolation.

The sales tax base was derived annually by multiplying annual expenditures by 5.75 percent to obtain total sales taxes and then reduced thereafter to 3.75 percent to yield locally distributed sales taxes. The two (2) percent differential represented the amount that would be allocated to the State General Fund under 1983 statutes. The remaining 3.75 percent produced a local sales tax distribution as follows:

<u>Total</u>	<u>65.22 Percent</u>	<u>03.75 Percent</u>
School Support	26.09	1.50
CCRT	8.695	.50
Suppl. CCRT	30.435	1.75

This distribution was in accordance with existing legislative authorizations. Quarterly and annual amounts of sales taxes paid on the 5.75 percent



rate were subjected to the reduction and distributions indicated in the left-hand column above. The annual amount of such sales tax revenues varied only as the expenditure levels of the mine/process plant itself varied (the tax rate and distribution was fixed). Sales taxes paid by mine/process plant employees were not included in these figures but were calculated separately.

Ad valorem property taxes paid on the value of the mine/process plant were specific to the property of the mine/process plant, as the sum of tangible investments less sales tax on the property plus the land costs. These do not, however, include the R/V park or the work camp properties established and operated during the construction phase, nor any other properties. Taken at 35 percent of the assessed value of the property base identified in millions of dollars of market value, the Eureka County tax rate of .00748/dollar was applied to yield annual tax revenue amounts which varied only as the property base changed. The property base tended to rise in value throughout the period in the five year intervals used for estimates. The local distribution of these tax revenues followed the same pattern as those of the revenues generated by the net proceeds tax and was summed with that tax as an annual amount for simultaneous treatment.

The ad valorem tax applied to net proceeds falls upon estimated net proceeds (or net revenue) less production costs of the mining, milling, stripping and other costs of local overhead and depreciation. The Eureka County tax rate of .00748/dollar was applied directly to the balance achieved by subtracting costs from the estimated net proceeds on an annual basis. The local distribution of the combined net proceeds tax and mine/process plant property tax was distributed as follows:

<u>Division</u>	<u>Percent</u>
School Support	66.66
County	32.37
Towns	0.137
Special Districts	0.833

The estimated annual values of all mine/process plant taxes paid were derived from a property base and net proceeds estimate fixed in constant 1982



dollar values and provided WRC by EXXON. Tax revenues accruing to special districts out of the ad valorem tax levy did not appear in any form on the forecasts. The allocation has, however, been shown for informational purposes.

Personal Tax Computations. Sales taxes, based on the spending patterns of mine/process plant employees and the generated secondarily employed for the initial 35 year period, were calculated at \$66.95 per capita of household populations (see Table 3-27). Using an after federal-tax net income of 70 percent and 85 percent (conservative) respectively, a total net disposable income of \$7,577,100 was derived. Therefore, a mine/process plant population of 1,236 employees yielded total annual sales taxes of \$82,746 or \$66.95 per capita. It was assumed that incomes and spending levels on fifteen different normal household items would yield, annually, the same tax levies for the generated secondarily employed as it would for the direct hire mine/process plant operations employees. Lastly, it was assumed that combined spending would yield annual tax revenues of \$118,830 at the stabilized population levels that would be expected to prevail from year 4 throughout the forecast period. It should be noted that only six of the fifteen household expenditure items targeted incurred a sales tax since housing, electricity, water, heating, food, savings, medical care, recreation and insurance are exempt from sales taxes. In addition, the state sales tax applied to only two of the remaining six items. Clothing and household items (furnishings etc.) were taxed at a 3.75 percent rate in determining total sales taxes.

Other sales taxes were specific to gasoline, cigarettes, liquor and beer. These levies were independent of the state sales tax and were established at the following levels:

Gasoline	\$0.105/gallon
Cigarettes	\$0.100/pack
Liquor	\$2.05/gallon
Beer	\$0.06/gallon



Personal Expenditures. Expenditures on clothing were estimated at five percent of the normal after tax disposable income, or \$14,207 ( $\$378,855 \times 0.0375$ ) for the 640 operations workers' households. Household expenditures were estimated at four percent of disposable income, or \$11,366 ( $\$303,384 \times 0.0375$ ) for the 640 operations workers' households. These tax payments represented 17.17 percent and 13.73 percent respectively, of the total sales taxes paid annually by these employees.

Expenditures on gasoline, liquor and beer were calculated separately from the budget and then were entered later as percentages and amounts as the rationale for these expenditures was explained. The rationale used the following logic. The total expenditure for gasoline was calculated to be \$530,397 based on the consumption of 407,998 gallons of gas at a price of \$1.30 per gallon and a tax rate of \$0.105 per gallon. This figure was derived by assuming that each employee would consume 1.93 gallons per day per 330 day work year. The 1.93 gallons was determined by assuming a 37-mile average each workday using a 19.17 average mile per gallon. Liquor expenditures totaled \$75,771 or one percent of disposable income. This expenditure was equivalent to a total consumption of 1,263 gallons at a base price of \$60.00 per gallon. Individual consumption was estimated at 0.0054 gallons per worker per day among 640 workers. At the tax rate of \$2.05 per gallon, the tax yield was \$2,589 annually. The expenditures for beer were calculated to be \$151,542 annually. This figure was derived on the basis of 640 workers consuming 0.162 gallons of beer per day for an annual total of 37,885 gallons. Using the tax rate of \$0.06 per gallon, the total tax revenues were calculated to be \$2,273 annually. The calculations for cigarette consumption were similar. Assuming 40.5 percent of the operations workers smoked one pack of cigarettes per day, then the total number of packs smoked annually was calculated at 94,714 packs. At a tax rate of \$0.10 per pack, the annual tax yield from cigarette smoking was determined to be \$9,471.

Quarterly rates of the sales tax revenues derived from personal spending were also extended to the quarterly forecasts of construction workers, as well as to the arriving mine/process plant employees, and the generated secondarily employed. Local hires were excluded from the quarterly and annual sales tax forecasts, since their former employments were unknown



and consequently may not contribute to the incremental tax revenues being calculated.

The distribution of state sales taxes and the specific taxes cited were assumed as follows:

(1) State Sales Tax 5.75 percent

General Fund	34.78 percent (2.0 of 5.75)
School Support	26.09 percent (1.5 of 5.75)
CCRT	8.7 percent (0.5 of 5.75)
Suppl. CCRT	30.43 percent (1.75 of 5.75)

(2) Gasoline Tax \$0.105/gallon

State Highway Fund	76.20 percent
County Roads/Streets	23.80 percent

(3) Cigarette Tax \$0.10/pack

County/City Support	100.00 percent
---------------------	----------------

(4) Liquor/Beer Tax \$2.05 & \$0.06 gallon

County (if no city)	100.00 percent
County (if city)	pro rata

Annual Forecasts. For the seven local jurisdictions receiving tax shares (Eureka and Elko Counties, Eureka and Elko School Districts and Eureka, Elko and Carlin municipalities), the calculated residential property and personal sales tax revenues were distributed according to legislated authorizations, and place of incidence of the tax. That is, the distribution of personal residences and spending between Elko and Eureka jurisdictions, generally identified the region (e.g. County) to receive the revenue, while the internal distribution of the tax revenue was predetermined, by law, between the county, school district and the cities and/or towns. These two taxes appear in the calculated revenue accounts of each jurisdiction.

The remaining taxes on mine/process plant property, sales tax on mine/process plant expenditures for supplies and equipment and the net proceeds tax



were placed in three accounts: Eureka County, Eureka School District and Eureka Town. The sum of these taxes for all jurisdictions was taken for each of the twelve quarterly periods of start-up and for the period of year 4 through year 50 annually.

Expenditures forecasted for the seven jurisdictions were per capita rates multiplied by annual levels of population. The per capita rates were applied as follows:

<u>Eureka</u>	<u>Rate</u>
Town (Eureka)	\$ 115.56
County	\$ 795.86
School District	\$5,687.33*

<u>Elko</u>	<u>Rate</u>
Town (Elko)	\$ 257.77
County	\$ 158.13
School District	\$2,222.36*
Town (Carlin)	\$ 282.04

\*per student, forecast as twenty percent of new added populations

In summary, all expenditures were derived from the aforementioned population assumptions and per capita expenditure rates. In addition, the needs of each community and especially the Town of Eureka, for typical or required community services such as ambulances, police, recreation, churches, motels and fire protection were derived using the population projections and historical precedents established both locally and regionally for each service. The same general logic was applied to the need for new classroom space. For classroom size, a 22 student class was considered average in determining the number of new classrooms which would be needed in each case. Therefore, the number of classrooms was derived by dividing the number of new students by 22 with an allowance for additional support space such as laboratories and administration offices.



### 3.3.3 Methods of Fiscal Analysis

As discussed previously, all expenditures were deduced by multiplying projected populations by derived per capita costs. This is a common method of analysis for economics and fiscal impacts and is quite valid as long as reasonable population projections are used. On the other hand, revenues were not strictly derived on a per capita basis but rather were estimated on the basis of historical precedent. Historical precedents for items of revenue were arrived at by inspecting the past budgets of town, county and state governments. After examining the budgets, it was possible to make revenue projections which were based on specific tax authority applied to each of the budgetary accounts. Obviously, the population forecasts which were utilized for expenditures also came into play indirectly since they were used, in some cases, as a quantity, or portion thereof, paying a specific tax or forming a group which represented a specific segment of the taxable population (e.g., a group of homeowners living in single family housing units). Other revenues, such as the Net Proceeds Tax, were computed directly from conservative estimates of potential output against which the specific taxing formula for a particular tax was applied.

Two methods of analysis were used to prepare the forecasts. The first was a strictly linear analysis in which expenditures were derived simply as the product of projected populations (or segments of populations) and per capita costs. This method of analysis is especially useful in comparing two similar populations in uniform economic regions but may be less accurate where there are large differences in populations and/or costs. Therefore, a second analysis was performed using the concept of economies of scale wherein increases in population are accompanied by decreases in per capita costs. The economies of scale was thought to be most applicable to the Eureka County area because Eureka County itself is sparsely populated and therefore has per capita costs that are fairly high when compared to per capita costs in its more populous northern neighbor, Elko County. To apply the economies of scale forecast to the area, a linear regression analysis was made of the relationship between Eureka County populations and those of Mineral, Humboldt, Lyon and Elko Counties for the period ending June 30, 1982. An identical analysis was made of the Eureka County School District and five other low-



enrollment school districts using available 1979 and 1980 data. (The county populations included step-wise sizes of 1,395, 6,286, 11,816, 15,235 and 19,875 individuals respectively. Enrollment sizes included classes of 114, 173, 190, 700, 907 and 911.)

A linear regression analysis considers the relationship, if any, between two variables in the real world and enables one to make experimental observations of a system using known paired variables (x,y). Essentially, a linear regression analysis provides predictions based on the "average" relationship between the variables. In order to test the effectiveness of the regression, a third value called the coefficient of determination or correlation coefficient ( $r^2$ ), is generated. the  $r^2$  value lies between 0 and 1 and indicates how closely the equation resembles the experimental data (the closer  $r^2$  is to 1 the better the fit).

In mathematical form, the linear regression approach solves the equation:

$$y = ax + a_0$$

where:

$$a_1 = \frac{\sum xy - \sum x \sum y / n}{\sum x^2 - (\sum x)^2 / n}$$

and

$$a_0 = (\sum y / n) - (a_1 \sum x / n)$$

The correlation coefficient  $r^2$  is defined:

$$r^2 = \frac{[\sum xy - \sum x \sum y / n]^2}{[\sum x^2 - (\sum x)^2 / n] [\sum y^2 - (\sum y)^2 / n]}$$

The results of the linear regression analysis, as applied to expenditure per capita values, are reported in Section 3.4.



### 3.3.4 Sources of Forecasting Data Base

#### 3.3.4.1 Introduction

The sources used in the creation of the economics and fiscal forecasts originated, for the most part, from state and local publications and from conversations with the appropriate officials in government. This section lists the sources used under two categories: 1) References which included budget publications, school enrollment data and similar information; and 2) verbal sources which included personal communications of information from individuals concerning such things as tax authority, local budgets and applications of tax formulas to specific cases.

#### 3.3.4.2 Reference Sources - Published Data

1. The Executive Budget, FY 1983-84 and 1984-85, Vol. 1, State of Nevada.
2. Legislative Appropriations Report 61st and 62nd Nevada Legislature, FY 1981-82, 1982-83 and 1983-84, 1984-85, Fiscal Analysis Division, Legislative Council Bureau.
3. Auditors' Reports, June 30, 1982.
4. Research Bulletin: Enrollment and Certified Personnel Information, Vol. 25 Number 1, March 1983. Nevada Department of Education; Biennial Report of Selected Data, Superintendent of Public Instruction.
5. Biennial Report of Selected Data, Supplement Number One, Department of Education, July 1, 1978 to June 30, 1980 inclusive, Superintendent of Public Instruction.
6. 1983 Eureka County Profile: State Office of Community Services, State of Nevada. Draft Copy.
7. 1983 White Pine County Profile: State Office of Community Services, State of Nevada. Draft Copy.
8. Socioeconomic Technical Discipline Report; Anaconda Nevada Moly Project. Environmental Research and Technology, Fort Collins, Colorado, 1980.



#### 3.3.4.3 Verbal Communication Sources

1. Josephine Couperthwaite: Chief, Division of Assessment Standards, Department of Taxation; State of Nevada; (702) 885-4840.  
Information provided by Ms. Couperthwaite was used exclusively for questions concerning the Net Proceeds Tax, its application, usable deductions and formulation.
2. Lorraine Wilcox: Budget Analyst, Department of Taxation; State of Nevada; (702) 885-4892.  
Lorraine Wilcox provided a large quantity of recent budget information including the revenues and expenditures for Eureka County, Elko County, Town of Eureka and Elko City. She also clarified various aspects of these budgets such as the derivations of some revenues and expenditures.
3. Joan Shangle: Clerk-Treasurer, Eureka County; (702) 237-5262.  
Information provided by Ms. Shangle was used for clarification of county revenue procedures.
4. Michael Rebaleti: Recorder-Auditor, Eureka County; (702) 237-5263.  
Information provided by Mr. Rebaleti was used, along with Joan Shangle (3), as a source of information pertaining to revenue and expenditure items in Eureka County.
5. Fred Artus: Deputy Director, Department of Taxation; State of Nevada; (702) 885-4892.  
Information provided by Mt. Artus was utilized to answer questions concerning the application of taxes, such as the ad valorem tax, to specific situations when the use of a particular tax was not clear.



### 3.3.5 Perspective on Analysis and Forecasting

#### 3.3.5.1 Introduction

The previous part of this methods section has dealt with specific aspects of the methodologies involved in the formulation of the economic and fiscal impacts of the Mt. Hope Project in Eureka County, Nevada. This part discusses the positive and negative aspects of the assumptions, methods and sources for the purpose of presenting a balanced perspective of the environmental impact statement. It is hoped that this discussion will give the reader an appreciation of the magnitude of the problem of projecting populations and economies into the future in sparsely inhabited areas having a "boom or bust" history.

#### 3.3.5.2 Discussion

The history of Eureka County is typical of many locales in the western United States in that it has experienced periodic cycles of marked population increases followed by abrupt declines which have been caused almost exclusively by mining industry activity related to the availability of various mineral resources in the area. From the last century to the present, populations have increased and decreased on an irregular basis in Eureka County. These peaks and valleys make population projections for the area more of an art than a science no matter how one chooses to approach the problem. Therefore, for this work, the population trends were derived very conservatively using only actual employees hired by the company and a supporting secondary population which was taken as a percentage of the primary work force. These population assumptions will be accurate as long as all other variables that have been considered also remain as projected. However, reality suggests that a system consisting of a dynamic population and an array of dependent variables will not remain constant for a 50 year project period. For example, changes in defense policy such as the deployment of a new missile system, may result in even larger populations than those predicted as would the development of another major industrial project or any other unforeseen event. Therefore, there must be an understanding from the beginning that the populations projected for Eureka County and its environs are presented conservatively and honestly using



the most reliable information available. More predictable than population but still subject to many dependent variables are the spending and social habits of the future population. Revenues established for these populations can be changed rather quickly as the result of political drift (that is more liberal or more conservative government), international events (such as war, embargoes or changes in foreign governments) or the domestic economy (depression or recession). Even so, spending habits and social behaviors are likely to change more slowly and be more predictable for a given area than are populations. Consequently, the method for predicting revenue by using established spending patterns and taxing authority is considered to be the most accurate and most reliable method available.

It should be clear then, that these predictions are submitted as exercises in probability and the scenarios presented are considered to be the most probable. The local sources, both written and oral, which have been intensively utilized to form the data base for these predictions, represent the best available and indeed are, in some cases, the only sources applicable to the area. It is, therefore, intended that reviewers recognize, as the authors do, the limitations and degrees of certainty of making predictions. Because the limitations and uncertainties in predicting future economic and fiscal events have indeed been recognized by the analysts and, to the greatest extent possible, accounted for in the predictive work conducted, the predictions are presented with confidence relative to assessment of "real" economics.

### 3.4 Proposed Action

In addition to the on-site development of mine/process plant, the proposed action is to provide an EXXON-assisted subdivision (see Section 3.2). The various aspects of socioeconomic impacts resulting from this alternative are discussed in this section.

#### 3.4.1 Employment

##### 3.4.1.1 Summary

The following discussion identifies the anticipated employment



effects of implementing the proposed action relative to mine/process plant development. Section 3.4.2 evaluates the employment influence upon population levels.

Construction on the mine/process plant complex at Mt. Hope would require 11 quarters (Figure 3-1). At peak employment, construction workers would total 940, of whom it is estimated, for the purpose of impact analysis, 845 would be non-local (90 percent). Non-local has been defined as any employees who are expected to require housing because of a commute distance exceeding 90 miles. Total additional household populations, including dependents of the incoming non-local workers, would be 1,732 persons. This peak level would be sustained during four quarters of the mid-period of construction.

Operation of the Mt. Hope Project would require the sustained employment of 640 persons (Figure 3-1), of whom it is estimated, for the purpose of impact analysis 525 or 82 percent of the total would be non-local. Operational employment would rise more slowly to the full-complement level which is expected to be achieved in the tenth quarter of the 12-quarter start-up phase. Household populations of direct-hire employees of non-local origin would be 1,236 persons. This peak would arise as construction neared completion (12th quarter) and would stabilize thereafter.

The highest level of non-local construction and operations workers and their dependents would occur in the seventh quarter of the start-up period. Employment would reach the level of 1,410 with a total peak population of 2,642 persons.

Secondary employment would be generated from the additional local spending by construction and direct-hire operations workforces, including that of local employees recruited to construction and operations staffing. This secondary employment and the associated dependents are expected to be of non-local origin, representing net new employment and immigrant populations. Total generated employment was calculated from a set of factors rather than from a single multiplier. Analyses indicate that total secondary employment generated by both the construction and operations phases combined would be 387. The peak employments of each are non-coincident, and because generated



employment would be lagged one quarter, a highest quarterly level of 299 would be expected to occur (seventh quarter).

Combined peak employment levels of construction, operations and secondary employment would be expected to occur in the seventh quarter and total 1,709 new workers (1,410 primary workers plus 299 secondary workers). Combined peak population influx arising in the same quarter would total 3,247 additional persons in the affected area (2,642 primary workers and dependents plus 605 secondary workers and dependents (see Section 3.4.2).

#### 3.4.1.2 Employment Calculations

Scheduled EXXON employment, expected population increases, and generated secondary employment and population details are summarized on Table 3-3. Employment directly identified as EXXON payroll based was estimated and provided by EXXON. Total generated employment was calculated by the WRC EIS Team from a set of factors rather than from a single multiplier. These factors assert that spending habits are different between single and married, professional and labor, and local and non-local employees occupied in the Mt. Hope construction and mine/process plant operation. Based on standard industry assumptions, locally employed labor would have the least secondary employment multiplier and non-local married professionals would have the highest multiplier. Construction crews, on temporary employment and on single status for one-half their number, would take on a low local-hire multiplier. Secondary employment generated by construction would amount to 157 persons and that of operations would amount to 230 persons (total 387).

Of the total 1,709 new workers during the peak employment level of construction and operation, 1,532 would be characterized as non-local. The total 1,532 new labor force addition to the Eureka County base labor of approximately 700 in 1983 would represent a significant increase of 220 percent in base labor pool (2,232 versus 700). The employment of approximately 177 local individuals would represent an absorption of as much as 25 percent of the 1983 Eureka County labor pool (disregards other county "local" hires). The significance of variability in current Eureka County unemployment rates (ranging from 2.1 and 21.6 percent, 1979 and 1982, respectively) is increased



Mt. Hope Molybdenum Project

Table 3-3 Local and Non-local Employment and Populations

	Year 1		Year 2				Year 3				Year 4	
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Employment (Total)												
Construct.	50	400	790	940	940	940	940	650	230	50	10	0
Operations	10	70	170	260	350	430	470	500	590	640	640	640
Total	60	470	960	1,200	1,290	1,370	1,410	1,150	820	690	650	640
Non-local	54	419	853	1,061	1,135	1,200	1,233	996	692	570	534	525
Generated	0	39	116	192	238	270	299	298	252	222	232	235
Subtotal	54	458	969	1,253	1,373	1,470	1,532	1,294	944	792	766	760
Population (Non-local)												
Construct.	92	737	1,455	1,732	1,732	1,732	1,732	1,198	424	93	19	0
Operations	21	139	335	506	680	834	910	967	1,142	1,236	1,236	1,236
Total	113	876	1,790	2,238	2,412	2,566	2,642	2,165	1,566	1,329	1,255	1,236
Generated	0	69	211	359	461	536	605	615	540	505	538	548
Total	113	945	2,001	2,597	2,873	3,102	3,247	2,780	2,106	1,834	1,793	1,784

Source: EXXON Minerals Company and WRC EIS Team



in that while high unemployment would be offset, the limited employment base available would require other-county participants in the Mt. Hope employment scheme. Additionally, the increased labor attributable to mining would significantly increase the mining sector industrial/fiscal influence within the region. As indicated by Tables 2-10 and 2-11, the mining employment sector influence currently approximates 62 percent (1981, 388 of 618 NRS 612 employment) and 66.7 percent (1982, 340 of 510 NRS 612 employment) <sup>1/</sup>. The additional Mt. Hope employment (assuming a 1982 County base employment of 510 NRS 612 and no transfer of 340 mining individuals) would represent a change of mining sector influence from 62 percent to more than 78 percent (1,410 mine/process plant employees plus 340 resident mining sector employees of total 2,219 workforce (1,709 plus 510).

Tables 3-4 through 3-10 list the calculated characteristics and assumptions pertaining to the employment impact anticipated as a result of proposed action and/or alternatives implementation.

As indicated in the previous discussion, the population characteristics presented in this section have been utilized as the basis of socio-economic impact determination (e.g., housing demand, population distribution, fiscal spending requirements, etc).

#### 3.4.2 Population Impact

##### 3.4.2.1 Summary

The influence of the new employment levels and populations would be experienced by Eureka and Elko Counties, mainly in the towns of Elko, Carlin and Eureka. Present population levels in these jurisdictions and projections

---

<sup>1/</sup> "NRS 612 employment" refers to those individuals who are covered under the State's Unemployment Compensation Law NRS 612. The discrepancy between total estimated employment of 700 and NRS 612 employment of 618 represents individuals not covered by state unemployment compensation arrangements.



Mt. Hope Molybdenum Project

Table 3-4 Construction Personnel: Characteristics

		Non-Local Characteristics							
		Number		Married		Number Households	Married Population	School Children	Single/ Married Households
		( Basis )	Local	Single	w/Dependents				
I	Construction	100	940	( 50 )	( 50 )	(1.1 per)	(3.4)	( 20 )	Total
	A Local	10	94	(Percent)	(Percent)			(Percent)	
	B Non-local	90	846			385	1309	262	808
<u>Locational Distribution:</u>									
1)	500 Unit Man Camp		0	423	0	0	0	0	423
2)	400 Space Vehicle Park		0	423	423	385	1309	262	385
3)	Eureka Area		94	0	0	0	0	0	



Mt. Hope Molybdenum Project

Table 3-5 Direct-Hire Operations Personnel: Characteristics

			Non-Local Characteristics						% Distribution			
Direct Personnel	Number	Local	Non-Local 1/	Single 2/	Married w/Dependents	Married Households	Married Population	School Children	Single/ Married Households	House Holds	School Children	
<b>I</b>												
(Basis)												
A Operating Workers	640											
Professional	130											
Labor	510											
<b>B</b>												
A Local	115	115										
Professional	13	13										
Labor	102	102										
<b>B</b>												
Non-Local	525		525	105	420	323	1131	226	428			
Professional	117		117	23	94	72	252	50	95			
Labor	408		408	82	326	251	879	176	333			
<b>II</b>												
New Community Case	640	115	525	105	420	323	1131	226	428	100	100	
1) Subdivision	563		461	93	369	284	994	199	377	88	88	
Professional	104		94	19	75	58	203	41	77			
Labor	459		367	74	294	226	791	158	300			
<b>2) Eureka, Other</b>												
Professional	64		53	10	43	32	112	22	42	10	10	
Labor	51		12	2	10	8	28	5	10			
<b>3) Elko</b>												
Professional	13		41	8	33	24	84	17	32	2	2	
Labor	13		11	2	9	7	25	5	9			
Professional	0		11	2	9	7	25	5	9			
Labor	0		0	0	0	0	0	0	0			
<b>III Dispersed Personnel Case</b>												
1) Eureka	640	115	525	105	420	323	1131	226	428	100	100	
Professional	409		332	66	266	204	714	143	270	63	63	
Labor	52		47	9	38	29	102	20	38			
<b>2) Elko</b>												
Professional	357		285	57	228	175	612	123	232	29	29	
Labor	180		152	31	121	93	326	65	124			
<b>3) Carlin</b>												
Professional	78		70	14	56	43	151	30	57			
Labor	102		82	17	65	50	175	35	67			
Professional	51		41	8	33	26	91	18	34	8	8	
Labor	0		0	0	0	0	0	0	0			
Professional	51		41	8	33	26	91	18	34			
Labor	0		0	0	0	0	0	0	0			

1/ 90% of professionals are non-local; 80% of labor is non-local. These percentages used to identify locational distributions shown below.

2/ Also equal to single households.



Table 3-6 Manpower Levels By Quarter -- and Corresponding Family Characteristics Direct Project Personnel x Type  
(Includes Local Hire)

	Year 1			Year 2			Year 3			Year 4	
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q 2Q
I Construction	50	400	790	940	940	940	940	650	230	50	10 0
II Operating <sup>1/</sup> Professional	10	30	60	70	90	100	110	110	130	130	130
Labor	0	40	110	190	260	330	360	390	460	510	510
III Total	60	470	960	1200	1290	1370	1410	1150	820	690	650 640
FAMILY CHARACTERISTICS: DIRECT PROJECT PERSONNEL (Includes Local Hire)											
I Construction	5	40	79	94	94	94	94	65	23	5	1 0
Local	45	360	711	846	846	846	846	585	207	45	9 0
Non-Local	22	180	355	423	423	423	423	293	104	23	5 0
Single	22	180	355	423	423	423	423	293	104	23	5 0
Married	20	164	323	385	385	385	385	266	94	20	4 0
Mar. H.Holds	70	557	1100	1309	1309	1309	1309	905	320	70	14 0
Mar. Popul.	14	111	220	262	262	262	262	181	64	14	3 0
School Age	.0532	.4255	.8404	1.00	1.00	1.00	1.00	.6915	.2447	.0532	.0106
(%)											
II Direct-Hire (Professional)	1	3	6	7	9	10	11	11	13	13	13
Local	9	27	54	63	81	90	99	99	117	117	117
Non-Local	2	5	11	12	16	18	19	19	23	23	23
Single	7	22	43	51	65	72	80	80	94	94	94
Married	6	17	33	39	50	55	61	61	72	72	72
Mar. H.Holds	19	58	116	136	174	194	213	213	252	252	252
Mar. Popul.	4	12	23	27	35	38	42	42	50	50	50
School Age	.0769	.2308	.4615	.5385	.6923	.7692	.8462	.8462	1.00	1.00	1.00
(%)											
II Direct-Hire (Labor)	0	8	22	40	52	66	72	78	92	102	102
Local	0	32	88	152	208	264	288	312	368	408	408
Non-Local	0	6	18	31	42	53	58	63	74	82	82
Single	0	26	70	121	166	211	230	249	294	326	326
Married	0	20	54	93	128	162	177	192	226	251	251
Mar. H.Holds	0	70	190	327	448	569	620	672	793	879	879
Mar. Popul.	0	14	40	66	90	114	124	135	159	176	176
School Age	0	.0784	.2157	.3725	.5098	.6471	.7059	.7647	.9020	1.00	1.00
(%)											

<sup>1/</sup> Refer to Table 3-7 for Itemized Breakdown



Mt. Hope Molybdenum Project

Table 3-7 Summary Manpower Levels By Quarter: Total Professional and Labor

DIRECT-HIRE PERSONNEL												
	Year 1		Year 2		Year 3		Year 4			Year 1		
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q		1Q	2Q	
Local	1	11	28	47	61	76	83	89	105	115	115	115
Non-Local	9	59	142	215	289	354	387	411	485	525	525	525
Single	2	11	29	43	58	71	77	82	97	105	105	105
Married	7	48	113	172	231	283	310	329	388	420	420	420
H.Holds	6	37	87	132	178	217	238	253	298	323	323	323
Popul.	19	128	306	463	622	763	833	885	1045	1131	1131	1131
School Age	4	26	63	93	125	152	166	177	209	226	226	226
% Level Quarterly	.0177	.1150	.2788	.4115	.5531	.6725	.7345	.7832	.9248	1.00	1.00	1.00

NOTE: % level quarterly used to allocate numbers by quarter to different locations.



Mt. Hope Molybdenum Project

Table 3-8 Generated Employment Multipliers  
(By Construction and Direct-Hire Personnel)

	<u>Single</u>	<u>Married</u> <sup>1/</sup>	
1) Professional			
Local	.10	.20	Factors at left are multiplied against populations indicated 1) and 2) quarterly or annually.
Non-Local	.125	.25	
2) Labor			
Local	.05	.10	
Non-Local	.075	.15	

<sup>1/</sup> Household populations of married personnel.

PREMISES:

1. Existing regional work force experiences slack time of 40%.
2. New demand levels must generate new supply orders (or volume of goods and services) over 50% of existing trade levels before new jobs are generated.
3. Existing market supplies of goods and services are limited; local spending will be restricted, and mail orders will siphon spending away to non-local supply houses.
4. Professionals and married personnel will spend more than labor and single groups, because of higher incomes and/or household costs, perceived job stability, and responsibility levels (personal and household maintenance items).
5. Single status, including construction crews, limits spending due to shorter-term employments, higher savings requirements, and take-home pay to families not in residence.
6. Construction crews and local hires are classed as local labor in generating employment.



Mt. Hope Molybdenum Project

Table 3-9 Generated Employment (Non-basic Jobs) (Includes Local Hire Multiplier)

Source of Generated Employment:				Generated Volume X Type:						Total Jobs Generated By: 1		
As Function Of:	Single Status Population		Married House- hold Popu- lation	Single (20%)	Married w/Dependents (80%)	Married Households (1.3)	Married Population (x 3.5)	School Children (20%)	Single (100%)	Married (100%)	Total	
	Number											
I												
A	Construction	940		31	126	97	240	68	5	0	157	
B	Local	94	94	1	4	3	11	2	21	131	5	
	Non-Local	846	423	30	122	94	329	66			152	
IA	New Community Case	640		46	184	141	493	98			230	
	Local	115	23	5	21	16	56	11	1.1	24.7	26 2/	
	Non-Local	525	105	41	163	125	437	87	8.9	195.1	204	
1)	Subdivision	461	93									
	Prof	94	19	11	42	32	112	22	2.4	50.7	53	
	Labor	367	74	25	99	76	266	53	5.5	118.6	124	
2)	Eureka Other	53	10									
	Prof	12	2	1	6	4	14	3	.2	7.0	7	
	Labor	41	8	3	10	8	28	6	.6	12.6	13	
3)	Elko	11	2									
	Prof	11	2	1	6	5	17	3	.2	6.2	7	
	Labor	0	0	0	0	0	0	0	0	0	0	
IB	Dispersed Personnel Case	640		46	184	141	493	98			230	
	Local	115	23	5	21	16	56	11	1.1	24.7	26 2/	
	Non-Local	525	105	41	163	125	437	87	9	19.5	204	
1)	Eureka	332	66									
	Prof	47	9	6	21	16	56	11	1.1	25.5	27	
	Labor	285	57	19	77	59	206	41	4.3	91.8	96	
2)	Elko	152	31									
	Prof	70	14	8	32	25	88	18	1.7	37.8	40	
	Labor	82	17	5	22	17	59	12	1.3	26.2	27	
3)	Carlin	41	8									
	Prof	0	0	0	0	0	0	0	0	0	0	
	Labor	41	8	3	11	8	28	5	.6	13.6	14	
I	Totals (I + IIA + IIB)	1580		77	310	238	733	166			387 (24.5%)	

1/ By source of new jobs generated, before distribution into categories at left.

2/ Local hire effects obtained from single/married (23/247) taken as ratio equal to non-locals. Local hire multiplier is low (local labor value).



Table 3-10 Manpower Levels By Quarter -- and Corresponding Family Characteristics

A) DIRECT PROJECT PERSONNEL: TOTAL (Includes Local Hire)													
		Year 1		Year 2		Year 3		Year 4					
		3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
III	Total Construction and Direct-Hire Personnel												
	Local	6	51	107	141	155	170	177	154	128	120	116	115
	Non-Local	54	419	853	1061	1135	1200	1233	996	692	570	534	525
	Single	24	191	384	466	481	494	500	375	201	128	110	105
	Married	29	228	468	595	654	706	733	622	492	443	425	420
	Mar. H.Holds	26	201	410	517	563	602	623	519	392	343	327	323
	Mar. Popul.	89	685	1406	1772	1931	2072	2142	1790	1365	1201	1145	1131
	School Age	18	137	283	355	387	414	428	358	273	240	229	226
B. GENERATED EMPLOYMENT - AND FAMILY CHARACTERISTICS: TOTAL (Includes Local-Hire Multiplier)													
I	By Construction												
	Single	0	7	20	28	31	31	31	26	15	5	2	1/
	Married	0	30	80	116	126	126	126	107	60	19	8	4
	Mar. H.Holds	0	23	61	89	97	97	97	82	45	14	6	3
	Mar. Popul.	0	57	152	221	240	240	240	203	112	36	16	8
	School Age	0	16	43	63	68	68	68	58	32	10	4	2
	(% Avg: 2 Qtrs.)	.2393	.6329	.9202	1.00	1.00	1.00	1.00	.8457	.4681	.1489	.0650	.0319
II	By Professional Direct Hire												
	Single	0	0	2	5	6	8	9	11	11	12	13	13
	Married	0	2	8	19	27	33	39	44	46	50	54	54
	Mar. H.Holds	0	2	6	14	21	25	30	33	35	38	41	41
	Mar. Popul.	0	5	22	49	71	88	104	116	121	132	143	143
	School Age	0	1	4	10	14	17	20	23	24	26	28	28
	(%: 1 Qtr. Lag)	.0384	.1538	.3461	.5000	.5000	.6154	.7307	.8077	.8462	.9231	1.00	1.00
	(2 Qtr. Avg.)												
III	By Labor Direct Hire 2/												
	Single	0	0	1	5	10	15	19	22	24	28	31	33
	Married	0	0	5	19	38	57	75	88	96	108	124	130
	Mar. H.Holds	0	0	4	15	29	44	58	68	73	83	95	100
	Mar. Popul.	0	0	14	51	103	154	202	237	257	292	333	350
	School Age	0	0	3	10	21	31	40	47	51	58	67	70
	(%: 1 Qtr. Lag)	.0000	.0392	.1470	.2941	.2941	.4411	.5785	.6765	.7353	.8335	.9510	1.000
	(2 Qtr. Avg.)												
IV	Total Generated Employment												
	Single	0	7	23	38	47	54	59	59	50	45	46	46
	Married	0	32	93	154	191	216	240	239	202	177	186	188
	Mar. H.Holds	0	25	71	118	147	166	185	183	153	135	142	144
	Mar. Popul.	0	62	188	321	414	482	546	556	490	460	492	501
	School Age	0	17	50	83	103	116	128	128	107	94	99	100

1/ Next qtr. this category is zero.

2/ Includes effects of local hires (26 jobs generated).



of baseline growth made by the Bureau of Business and Economic Research/UNR have been extrapolated to illustrate anticipated effects (Figure 3-2).

During the start-up phase of construction, the additional populations associated with construction crews would be concentrated in the Eureka area alone. These would be housed in a work-camp provided to single and single status workers, and a mobile home, trailer and RV camp would be provided for those with dependents. (See Chapter 1.0).

Distributions of Project Populations. Non-local operations employees would number 525 out of the total 640 scheduled for hire. Preferences in housing and location have been assumed, based on employment status, pay-scale and the relative attractiveness of alternative housing facilities. The expected distribution of these employees at full complement is compared for Case 5-A (proposed subdivision) and Case 5-B in Table 3-11.

In Case 5-A, the attraction of a wholly new subdivision in proximity to employment at Mt. Hope would tend to concentrate about 90 percent of non-local operations employees. The Eureka community and the subdivision together would attract fully 98 percent of the total (514). Only 11 professional employees are expected to make Elko their residence.

As new numbers of construction and operations workers arrive at Eureka, Elko and Carlin for employment at the Mt. Hope Project, their family members and additional new arrivals of secondarily employed people would also add to the total new populations in each community. It is estimated that the population increase in the area will stabilize at an annual average of 1,775 persons. Distribution of this subject population is depicted in Table 3-11.

Due to the peak population increases illustrated in Figure 3-2 and the manner of distribution in Case 5-A (or 5-B) a significant impact would result to Eureka Town. In the peak period (7th quarter), the project populations would be 4.9 times (3,029 versus 615) the expected population of Eureka Town in that period (this includes the subdivision). In Case 5-A, the towns of Elko and Carlin would experience population increases of only minor proportion by comparison. In addition, their peak new additions would occur in later



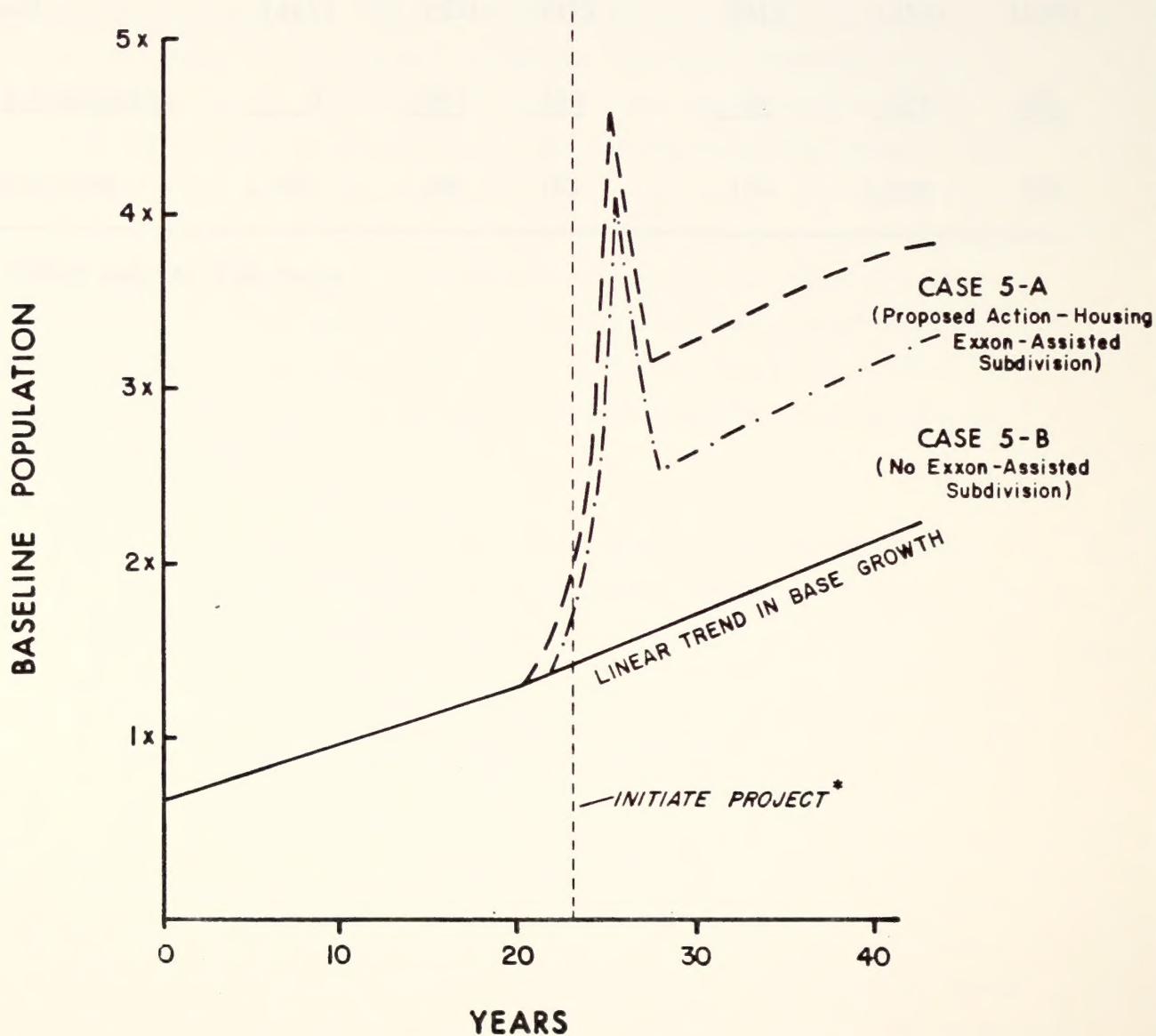


FIG 3-2  
HISTORIC AND PROJECTED POPULATION GROWTH  
IN EUREKA COUNTY

\* Initiate project line arbitrarily set at midscale to demonstrate effect.



Mt. Hope Molybdenum Project

Table 3-11 Stable Annual Populations

Employment	Proposed Action (5-A)			Alternative (5-B)		
	Subdivision			Decentralized Workforce		
	Subdiv.	Eureka	Elko	Carlin	Eureka	Elko
Household Populations	1,087	122	27	99	834	303
(Employees)	(461)	(53)	(11)	(41)	(355)	(129)
<u>Generated Population</u>	<u>0</u>	<u>363</u>	<u>168</u>	<u>31</u>	<u>274</u>	<u>234</u>
TOTAL POPUALTION	1,087	485	195	130	1,108	537

Source: EXXON and WRC EIS Teams



periods, as operations employees and generated employment stabilize. This factor results from the higher multiplier for secondary employment assumed for operations employees over construction workers, and the continuing rise of operations employee numbers through the period.

#### 3.4.2.2 Population Calculations

Normal Regional Populations. The influence of these new employment levels and populations would be experienced by Eureka and Elko Counties, mainly in the towns of Elko, Carlin and Eureka. Previous population levels in the jurisdictions of concern and projections made by the Bureau of Business and Economic Research/UNR are shown on Table 3-12.

Mine/Process Plant Populations. The amount of increase in these population levels due to the Mt. Hope project would correspond to the disposition of project populations between the three towns of Eureka, Elko and Carlin. Two conditions have been examined, as alternative distributions of mine/process plant operations employees:

1. Case 5-A (a new subdivision near Eureka would concentrate populations within Eureka County, with limited populations scattered to Elko and Carlin).
2. Case 5-B (no special housing provided, and free choice of housing promotes increased location in Elko and Carlin, due to community size).

Construction crews would be concentrated in the Eureka area alone and would be housed in a man-camp provided to single workers and those on single status, and an RV camp of mobile home-and-trailer character for those with dependents. The separate facilities would be equal in size: 423 single units in the man-camp, and 423 RV facilities for the married-with-dependents. As operations personnel increased in number during each quarter of the construction phase, they would be expected to seek housing according to personal preference in location and type of housing, but influenced by the presence or absence of a new community subdivision in close proximity to Mt. Hope.



Mt. Hope Molybdenum Project

Table 3-12 Historic Populations and Current Projections

	Eureka County	Eureka	Elko County	Elko	Carlin
1920	1,350	-	8,083	-	-
1930	1,333	-	9,960		
1940	1,361	-	10,912	-	-
1950	896	-	11,654	5,393	1,203
1960	767	-	12,011	6,298	1,023
1970	948		13,958	7,621	1,313
1980	1,198	-	17,269	8,758	1,232
1985	1,451	E 609	20,313	E 10,339	E 1,300
1990	1,762	E 740	23,789	E 12,109	E 1,350
1995	1,945	E 817	26,265	E 13,369	E 1,400
2000	2,145	E 901	28,962	E 14,742	E 1,450

The estimates (E) of populations for towns are based on the 1982-83 ratios of town populations to the county totals projected by the Bureau of Business and Economic Research, University of Nevada, Reno. For Eureka, projected growth is at 42 percent of the county, and for Elko at 50.9 percent: Carlin is estimated to grow at only 10 persons per year.



The proposed action and alternative case have been compared to determine the measureable effects upon existing normal populations of the towns of Elko, Eureka and Carlin during the forecast period. With these increases in future populations, demands upon new housing, utilities, and services may be traced to their final budgetary impacts upon normal recurrent revenues and expenditures of each jurisdiction and upon capital accounts for new construction of facilities (see Section 3.4.4 and 3.4.5).

Quarterly and Annual Distributions of Project Populations. As previously noted, it is expected that non-local mine/process plant operations employees would number 525 out of the total 640 scheduled for hire. By the end of the second quarter of year 4, construction would be complete and the 525 operations employees would be the only non-local workforce remaining in the region associated with the Mt. Hope Project. Their preferences in housing and location have been assumed, relative to employment status, pay-scale and apparent attractiveness of rival facilities. The expected distribution of these employees at full complement (end year 4) is compared in Table 3-13 for Case 5-A and the alternative 5-B.

As indicated by Table 3-13 (Case 5-A column) a wholly new subdivision in proximity to employment at Mt. Hope would tend to attract about 89 percent of non-local operations employees. The Eureka community and the subdivision together would attract fully 98 percent of the total. Only 11 professional employees would be expected to make Elko their residence.

As new numbers of construction and operations workers arrived at Eureka, Elko and Carlin for employment at the Mt. Hope complex, their family members and additional new arrivals of generated secondary employed would also add to the total new populations in each community. Peak populations would be reached in the first quarter of year 3 and by the end of third quarter, year 4 the population will have been reduced to the lower level at which stabilization of annual volumes throughout the forecast period has been predicted. The annual volumes would total 1,775 persons, distributed as shown on Table 3-14 for both the proposed action and decentralized workforce. Table 3-14 also includes the estimations of generated populations distributed



Mt. Hope Molybdenum Project

Table 3-13 Employee Distribution - Stabilized

Employment	Case 5-A Subdivision			Case 5-B Decentralized Workforce		
	Subdiv.	Eureka	Elko	Carlin	Eureka	Elko
Professional (117)	94	12	11		70	70
Workers (408)	367	41	--	41	285	82
<u>Total (525)</u>	<u>461</u>	<u>53</u>	<u>11</u>	<u>41</u>	<u>355</u>	<u>129</u>
Household Populations	1,085	122	27	99	834	303



Mt. Hope Molybdenum Project

Table 3-14 Stable Annual Populations and Distribution Percentage Characteristics

	Case 5-A			Case 5-B		
	Eureka	Elko	Carlin	Eureka	Elko	Carlin
1) Stable Annual Populations:						
<u>1987 3Q</u>	1,571	195	9	1,108	537	130

	Case 5-A			Case 5-B		
	Eureka	Elko	Carlin	Eureka	Elko	Carlin
2) Generated Populations:						
Average Percent	67	31	2	51	43	6

	Case 5-A			Case 5-B		
	Eureka	Elko	Carlin	Eureka	Elko	Carlin
3) Operations Employees:						
Average Percent	98	5	0	68	24	8



according to estimated principal places of expenditure by construction and operations employees. That is, 75 percent in the area of residence of the direct-hire employees and 25 percent in the largest near town. In practice, because construction employment phases out in year 4, the average effects of the multiplier of construction crews and operations employees would produce a locational distribution of generated employment (and populations) of the kind shown in the second category of Table 3-14; specifically, the generated population's distribution would average 67 percent in Eureka, 31 percent in Elko City and 2 percent in Carlin. Item 3 in Table 3-14 compares the generated population distributions to the locational distributions of the direct-hire operations employees at the end of the stabilizing year 4. Table 3-15 presents the quarterly forecasts of expected total volumes of combined populations. Table 3-16 details the number of EXXON employed population versus generated populations and anticipated distribution. Table 3-17 data itemizes workforce locational distribution, household characteristics and includes both construction and operational employee types. Table 3-18 summarizes the itemized data of Table 3-17 by location.

It may be seen (Table 3-15) that in the peak quarterly period of year 3, first quarter, the project populations would be 4.9 times the normal population of Eureka Town in that period (includes the subdivision) (versus 4.3 times the normal population in Case 5-B, Table 3-72). The towns of Elko and Carlin would experience population increases of only minor proportion by comparison. In addition, their peak new additions would occur in later periods, as operations employees and generated employments stabilized (or continued to rise as in case 5-B, Table 3-75). The peak lag would result from the higher multiplier for secondary employment assumed for operations employees over construction workers and the continuing rise of operations employee numbers through the period.

#### 3.4.3 Housing

A premise underlying the estimated population distributions of operations employees is that of multiple options in diversity and location of housing. Evaluation of housing requirements for the construction workforce has incorporated the Chapter 1.0 specifics regarding an RV/work-camp facilities



Mt. Hope Molybdenum Project

Table 3-15 Quarterly Forecasts of Project and Generated Population Effects on Communities  
Case 5-A, Proposed Action

	Year 1			Year 2			Year 3			Year 4			
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Eureka County													
1) Eureka Town (Normal)	598	600	603	605	607	609	615	622	628	635	641	648	655
Project 1/Total	113	920	1,925	2,465	2,705	2,907	3,029	2,557	1,903	1,640	1,587	1,578	1,571
2) County Balance	598	600	660	720	780	842	851	860	869	878	887	895	903
3) County Total (Normal)	1,196	1,200	1,263	1,325	1,387	1,451	1,466	1,482	1,497	1,513	1,528	1,543	1,558
Project Total	113	920	1,925	2,465	2,705	2,907	3,029	2,557	1,903	1,640	1,587	1,578	1,571
Elko County													
1) Elko City (Normal)	9,914	9,999	10,084	10,169	10,254	10,339	10,427	10,515	10,603	10,693	10,781	10,870	10,960
Project Total	0	25	73	126	160	186	208	213	194	185	195	198	195
2) Carlin (Normal)	1,281	1,285	1,289	1,294	1,297	1,300	1,302	1,305	1,307	1,310	1,312	1,315	1,318
Project	0	0	3	6	8	9	10	10	9	9	9	9	9
3) County Balance (Normal)	8,259	8,342	8,425	8,508	8,591	8,674	8,757	8,840	8,923	9,005	9,088	9,170	9,252
4) County Total (Normal)	19,454	19,626	19,848	19,971	20,142	20,313	20,486	20,660	20,833	21,008	21,181	21,355	21,530
Project Total	0	25	76	132	168	195	218	223	203	194	204	207	204

1/ Construction crews in work-camp and R.V. park plus Eureka Other plus Generated in Eureka.



# Mt. Hope Molybdenum Project

Table 3-16 Summary of Project and Generated Populations by Place by Quarter

	Year 1		Year 2		Year 3		Year 4						
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q				
I New Community Case	113	945	2,001	2,597	2,873	3,102	3,247	2,780	2,106	1,834	1,793	1,784	1,775
A Eureka													2/
EMC	113	873	1,783	2,224	2,397	2,548	2,624	2,144	1,541	1,302	1,226	1,211	1,209
Gen	0	77	142	241	308	359	405	413	362	338	361	367	362
Total Eureka County	113	920	1,925	2,465	2,705	2,907	3,029	2,557	1,903	1,640	1,587	1,578	1,571
B Elko													
EMC	0	3	7	14	15	18	19	22	25	27	27	27	27
Gen	0	22	66	112	145	168	189	191	169	158	168	171	168
Total	0	25	73	126	160	186	208	213	194	185	195	198	195
C Carlin													
EMC	0	0	0	0	0	0	0	0	0	0	0	0	0
Gen	0	0	3	6	8	9	10	10	9	9	9	9	9
Total	0	0	3	6	8	9	10	10	9	9	9	9	9
Total Elko County	0	25	76	132	168	195	218	224	203	194	204	208	204

3-49

EMC: EXXON Minerals Corp.

Gen: Generated

1/ EXXOM Minerals Corp. (including construction population) plus generated job hires and families totals include single plus married household populations.

2/ Decline of generated populations, and subsequent rise (or reverse) reflects more rapid change in construction population than in operating population, delay time response of generated, and 2 quarter rolling average volume of generated.



Mt. Hope Molybdenum Project

Table 3-17 Locational Distribution of Workforce by Quarter: Direct Project Personnel

	Year 1			Year 2			Year 3			Year 4				
	3Q	4Q		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	
Construction 1/														
Single/Man camp	22	180		355	423	423	423	423	423	293	104	23	4	0
Married/Park	22	180		355	423	423	423	423	423	293	104	23	4	0
H.Holds	20	164		323	385	385	385	385	385	266	94	20	4	0
Popul.	70	557		1100	1309	1309	1309	1309	1309	905	320	70	14	0
School	14	111		220	262	262	262	262	262	181	64	14	3	0
Local/Eureka	5	40		79	94	94	94	94	94	65	23	5	1	0
Proposed Subdivision 2/														
1) Subdivision														
Single	2	11		26	38	62	68	73	86	93	93	93	93	93
Married	7	42		103	152	204	248	271	289	341	369	369	369	369
H.Holds	5	33		79	117	157	191	209	222	263	284	284	284	284
Popul.	18	114		277	409	550	668	730	779	919	994	994	994	994
School	4	23		55	82	110	134	146	156	184	199	199	199	199
2) Eureka Other														
Single	0	1		3	4	6	7	7	8	9	10	10	10	10
Married	1	5		12	18	24	29	32	34	40	43	43	43	43
H.Holds	1	4		9	13	18	22	24	25	30	32	32	32	32
Popul.	2	13		31	46	62	75	82	88	104	112	112	112	112
School	0	3		6	9	12	15	16	17	20	22	22	22	22
3) Elko														
Single	0	0		0	1	1	1	1	2	2	2	2	2	2
Married	0	1		3	4	5	6	7	7	8	9	9	9	9
H.Holds	0	1		2	3	4	5	5	5	6	7	7	7	7
Popul.	0	3		7	10	14	17	18	20	23	25	25	25	25
School	0	0		1	2	3	3	4	4	5	5	5	5	5

1/ Local hires included as shown - local/Eureka (5-94 total).

2/ Omits local hires (115).



Mt. Hope Molybdenum Project

Table 3-17 Locational Distribution of Workforce by Quarter: Direct Project Personnel (continued)

Dispersed Personnel Case 1/	Year 1				Year 2				Year 3				Year 4			
	3Q		4Q		1Q		2Q		3Q		4Q		1Q		2Q	
1) Eureka																
Single	1		7	18	27	37	44	48	52	61	66			66		66
Married	5		31	74	109	147	179	195	208	246	266			266		266
H.Holds	4		23	57	84	113	137	150	160	189	204			204		204
Popul.	13		82	199	294	395	480	524	559	660	714			714		714
School	3		16	40	59	79	96	105	112	132	143			143		143
2) Elko																
Single	1		4	9	13	17	21	23	24	29	31			31		31
Married	2		14	34	50	67	81	89	95	112	121			121		121
H.Holds	2		11	26	38	51	63	68	73	86	93			93		93
Popul.	6		37	91	134	180	219	239	255	301	326			326		326
School	1		7	18	27	36	44	48	51	60	65			65		65
3) Carlin																
Single	0		1	2	3	4	5	6	6	7	8			8		8
Married	1		4	9	14	18	22	24	26	31	33			33		33
H.Holds	0		3	7	11	14	17	19	20	24	26			26		26
Popul.	2		10	25	37	50	61	67	71	84	91			91		91
School	0		2	5	7	10	12	13	14	17	18			18		18

1/ Omits local hires (115).



Mt. Hope Molybdenum Project

Table 3-18 Summary of Workforce Populations Distribution by Quarter: Direct Project Personnel

	Year 1			Year 2			Year 3			Year 4			
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	
<u>Construction and Subdivision</u>													
1) Eureka Town													
Area 1/													
Single	24	192	384	465	491	498	503	387	206	126	107	103	
Married	30	227	470	593	651	700	726	616	485	435	416	412	
H.Holds	26	201	411	515	560	598	618	513	387	336	320	316	
Popul.	90	684	1408	1764	1921	2052	2121	1772	1343	1176	1120	1106	
School	9	66	281	353	384	411	424	354	268	235	224	221	
2) Elko													
Single	0	0	0	1	1	1	1	2	2	2	2	2	
Married	0	1	3	4	5	6	7	7	8	9	9	9	
H.Holds	0	1	2	3	4	5	5	5	6	7	7	7	
Popul.	0	3	7	10	14	17	18	20	23	25	25	25	
School	0	0	1	2	3	3	4	4	5	5	5	5	

3152

1/ All construction personnel plus direct hire subdivision and "Eureka Other" designation (Table 3-17).



establishment. Table 3-19 details the total new housing demand anticipated during peak and stabilized project periods. Based on historical type selection in the area, the housing type preference for the project influx of operations-related population was estimated at 24 percent for single family units, 32 percent multi-unit types (e.g., apartments, townhomes) and 44 percent mobile home units (Table 3-20). Housing value was established as follows for fiscal impact purposes: single family units, \$75,000 each; multi-unit and mobile home, \$35,000 each.

The number of housing units and relative tax revenues produced by type and by quarter are also shown on Table 3-21 for combined housing demands by both operations employees and generated secondary employees, according to their location in Eureka, Elko or Carlin. Table 3-22 shows the relevant numbers of man-camp and RV park units, unit market values of either type, and ad valorem property tax revenues as incurred by quarter for the construction personnel.

Residential ad valorem property tax revenues of Eureka County and Elko County have been applied to these properties at rates per dollar of assessed value (35 percent of market) of 0.00748 for Eureka, and 0.01176 for Elko. Quarterly revenues from ad valorem taxation have been taken at one-fourth of these rates, or 0.000654 and 0.001029, respectively.

These forecasts assume that secondary employees would either find or build housing equal in type and cost to that chosen by operations employees. They would therefore sustain the same levels of taxation on residential properties. The revenues yielded quarterly on residential properties of combined total populations are shown on Table 3-21. The relative influence of Case 5-A upon ad valorem property tax revenues in Eureka and Elko Counties is summarized at the bottom of Table 3-21 where total quarterly sums are shown. The total number of housing units of all kinds required quarterly (excluding those of the construction crew) is shown on Table 3-23.

As illustrated by Table 3-19, peak housing demand would occur during the second year of project start-up for Case 5-A, the proposed action. This would require substantial reliance upon rental properties (e.g., houses,



Mt. Hope Molybdenum Project

Table 3-19 Estimated Total Housing Units Needed for Peak and Stabilized Project Influence Periods 1/

	Year 1	Year 2	Year 3	Year 4-50
<u>Construction Workforce</u>				
Work-camp	180	423	23	0
RV Park	164	385	20	0
(Subtotal)	(344)	(808)	(43)	(0)
<u>Operation Workforce <u>2/</u></u>				
<u>Proposed Action (Case 5-A)</u>				
Subdivision	44	259	376	376
Eureka Other	27	175	163	168
Elko	11	75	65	67
Carlin	0	4	3	3
(Subtotal)	(82)	(513)	(607)	(614)
<u>Decentralized Workforce (Case 5-B)</u>				
Eureka	50	305	380	368
Elko	26	168	184	187
Carlin	5	34	44	45
(Subtotal)	(81)	(507)	(608)	(600)

1/ Year end totals are not additive, i.e., maximum housing numbers associated with construction workforce equals 808 units, not the additive total of years 1 through 4.

2/ Includes generated secondary employment population housing demand.

Source: EXXON and WRC EIS Teams



Mt. Hope Molybdenum Project

Table 3-20 Estimated Housing Type Preference of Population Influx

	Year 1	Year 2	Year 3	Year 4-50
<u>Construction Workforce</u>				
Work-Camp	180	423	23	0
RV Park	164	385	20	0
<u>Operation Workforce</u>				
<u>Proposed Action</u> <u>(Case 5-A)</u>				
Subdivision				
- Single family	11	62	90	90
- Multi-unit	14	83	120	120
- Mobile Home	19	114	166	166
Eureka Other				
- Single family	6	42	39	40
- Multi-unit	9	56	52	54
- Mobile Home	12	77	72	74
Elko/Carlin				
- Single family	3	19	16	16
- Multi-unit	4	25	22	22
- Mobile Home	4	35	31	32
<u>Decentralized Workforce</u> <u>(Case 5-B)</u>				
Eureka				
- Single family	12	73	91	88
- Multi-unit	16	98	122	118
- Mobile Home	22	134	167	162
Elko				
- Single family	7	40	44	46
- Multi-unit	8	54	59	60
- Mobile Home	11	74	81	81
Carlin				
- Single family	1	8	11	11
- Multi-unit	2	11	14	14
- Mobile Home	2	15	19	20

Source: EXXON and WRC EIS Teams



Mt. Hope Molybdenum Project

Table 3-21 Quarterly Estimation of Housing Unit Numbers, Type and Property Tax Revenue: Operations Employment and Secondary Employment, Proposed Action

	Year 1			Year 2			Year 3			Year 4			
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Subdivision													
Single Family	2	10	25	37	53	62	68	74	85	90	90	90	90
Apartment	2	14	34	50	70	83	90	99	114	120	120	120	120
Mobile Home	3	19	46	68	96	114	124	135	156	166	166	166	166
Eureka Other													
Single Family	0	6	18	29	37	42	47	47	42	39	41	41	40
Apartment	0	9	24	39	49	56	62	63	56	52	54	54	54
Mobile Home	0	12	33	53	68	77	85	86	77	72	74	75	74
Elko													
Single Family	0	3	7	13	16	18	20	20	17	16	16	17	16
Apartment	0	4	10	17	21	24	26	26	23	21	21	22	21
Mobile Home	0	4	14	23	29	33	36	36	32	29	29	30	30
Carlin													
Single Family	0	0	0	0	0	1	1	1	1	0	0	0	0
Apartment	0	0	0	1	1	1	1	1	1	1	1	1	1
Mobile Home	0	0	1	2	2	2	2	2	2	2	2	2	2
Elko/Carlin Total													
Single Family	0	3	7	13	16	19	21	21	18	16	16	17	16
Apartment	0	4	10	18	22	25	27	27	24	22	22	23	22
Mobile Home	0	4	15	25	31	35	38	38	34	31	31	32	32

Ad Valorem Residential Property Tax Revenues as Incurred (\$) <sup>1/</sup>

Eureka	Single	100	770	2,080	3,190	4,350	5,030	5,570	5,850	6,140	6,240	6,330	6,330	6,280
	Apartment	40	520	1,310	2,010	2,680	3,130	3,430	3,650	3,830	3,880	3,930	3,930	3,930
	Mobile	70	700	1,770	2,730	3,700	4,310	4,720	4,990	5,260	5,370	5,420	5,440	5,420
Elko/	Single	0	240	570	1,060	1,310	1,550	1,710	1,710	1,470	1,310	1,310	1,390	1,310
Carlin	Apartment	0	150	380	690	840	950	1,030	1,030	910	840	840	880	840
	Mobile	0	150	570	950	1,180	1,330	1,450	1,450	1,300	1,180	1,180	1,220	1,220

<sup>1/</sup> Housing distribution is single family 24%, multi 32%, mobile 44%. Eureka tax rate is 35% (assessed value) x .00748/dollar x .25/qtr or .000654. Elko tax rate is 35% x .011760/dollar x .25/qtr or .001029. Each against single family \$75,000, multi \$35,000 and mobile home \$35,000.



Mt. Hope Molybdenum Project

Table 3-22 Construction Crew Housing Demands, Market Values, and Ad Valorem Property Taxes

	Year 1		Year 2				Year 3				Year 4	
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Construction Housing Units												
Occupied												
Man Camp	22	180	355	423	423	423	423	293	104	23	4	0
RV Park	20	164	323	385	385	385	385	266	94	20	4	0
Market Values (\$000)												
Based on Occupancy												
Man Camp	364	2,979	5,874	7,000	7,000	7,000	7,000	4,849	1,721	381	66	0
RV Park	125	1,022	2,014	2,400	2,400	2,400	2,400	1,658	586	125	25	0
Assessed Values (35 Percent)												
Based on Invested Values												
of Land and Improvements												
(Percent 000)												
Man Camp	127	1,043	2,056	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	1/
RV Park	44	358	705	840	840	840	840	840	840	840	840	1/
Ad Valorem Tax on Real												
Property 2/ (\$)												
Man Camp	237	1,950	3,845	4,581	4,581	4,581	4,581	4,581	4,581	4,581	4,581	
RV Park	82	669	1,318	1,570	1,570	1,570	1,570	1,570	1,570	1,570	1,570	
Total Taxes	319	2,619	5,163	6,151	6,151	6,151	6,151	6,151	6,151	6,151	6,151	

1/ Disposal by sale, grant, or conversion to another use is assumed.

2/ Rate of .00748 applied, with quarterly rate shown, of .00187 (collected in year following).

Construction Crew

RV Park Site: \$2.4 million or \$6,234/unit (385 units).

Work Camp: \$7.0 million or \$16,548/unit (423 units).



Mt. Hope Molybdenum Project

Table 3-23 Combined Total Households Non-local Operations and Generated Secondary Employment

	Year 1				Year 2				Year 3				Year 4			
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
I New Community Case																
Eureka Subdiv.	7	43	105	155	219	259	282	308	355	376	376	376	376	376	376	376
Eureka Other	1	27	76	121	154	175	194	196	174	163	169	170	168	168	168	168
Elko	0	11	31	53	66	75	82	82	72	65	67	69	67	67	67	67
Carlin	0	0	1	3	3	4	4	4	4	3	3	3	3	3	3	3
II Dispersed Personnel Case																
Eureka	5	46	120	185	242	286	315	328	347	356	359	361	359	359	359	359
Elko	3	30	79	124	159	187	206	210	209	208	212	213	211	211	211	211
Carlin	0	5	14	23	29	34	38	39	43	44	45	45	45	45	45	45



apartments, hotels, etc.) until such time that adequate housing becomes available. This anticipated reliance upon rental property has been determined on the basis that a housing shortage does exist in Eureka (Chapter 2.0) and a further assumption that preproject development would not occur. It should be noted, however, that EXXON commuters have noted that preproject development is considered to be a necessity, particularly with regard to mitigation planning within Eureka County. However, until such time that a preproject development plan becomes available, WRC has considered a worst-case assumption regarding housing shortfalls to be appropriate.

Shortfalls in housing are expected to result in an increased reliance upon mobile homes, perhaps much in excess of the 44 percent forecasted for the stabilized condition. While the Case 5-A subdivision scenario results in a housing shortfall, some mitigation may be expected in that construction requirements would be centralized and thusly focus industry response. An increase in the number and stability of Eureka-based homebuilder and mobile home dealerships could be anticipated.

The total housing demand would equal 614 units (Table 3-19). Under the Case 5-A scenario, 238 of the 614 units would be added to the Eureka and Elko/Carlin housing stocks. The addition to Eureka housing stock of 168 units would equal a 30.6 percent change from the 1980 housing stock of 549 units. Percent distribution of housing types within Eureka (Table 3-20) is estimated to be changed as follows: single family units - 39.7 to 31.8 percent; multiple family units 25.1 to 28.6 percent; and, mobile home units 35.2 to 39.6 percent. Percent change of type distribution in Elko County would be miniscule.

Baseline housing requirements for Eureka County were estimated to equal 136 units through the four year period of peak load (2.66 persons/unit). Thus, implementation of Case 5-A (development of subdivision) would result in a total Eureka housing demand of 304 (136 + 168, plus 376 subdivision units).

The effects associated with the housing demand of Case 5-A would be significant. As discussed in Chapter 2.0, availability of housing in Eureka is presently very limited even though 103 units (1980) are reported as vacant.



Discussions with county government personnel (1983) indicate that this is due to substandard housing unit conditions and second home or seasonal ownership of units. Thus, a shortfall of available housing up to 304 units over the four-year period was assumed as a worst-case scenario although actual numbers are expected to be smaller.

Due to the limited number of homebuilders and mobile home dealers in Eureka, the response to the housing demands of Case 5-A is anticipated to require temporary but significant reliance upon self-provided housing (trailers, campers, mobile homes) by the in-migrating population. All available multiple family, mobile home, or single family rentals are expected to be absorbed by the population influx. Overcrowding of available or self-provided housing units may occur. Unauthorized use of public lands may occur. The length of time required to ameliorate this situation has been estimated at one to one and one-half years.

Indirect effects of the anticipated housing shortfalls, although expected to be short term, may be significant in terms of the communities' satisfaction with employment opportunities, community relationships and environmental quality. Mitigation of the housing shortfalls would largely reduce the significance of direct and indirect effects.

#### 3.4.4 Local Government and Public Finance

##### 3.4.4.1 Summary

Implementation of the proposed action would significantly affect public financing in the region, having both positive and negative effects. Seven jurisdictions are involved: Eureka and Elko counties, Eureka and Elko county school districts, the towns of Eureka and Carlin, and the City of Elko. Each jurisdiction would be affected differently under either the proposed action Case 5-A, alternative Case 5-B, or No Action circumstances.

The financial effects of project and alternatives implementation upon each jurisdiction were analyzed extensively utilizing conservative methodologies. The detailed analytical results are presented in this section.



The following subsection summarizes methodologies of analysis, with subsections thereafter detailing the results pertinent to the analysis conducted.

Methodologies of Analysis. An analysis of fiscal impacts fundamentally requires the investigation of revenues versus expenditures. Upon implementation, the proposed action (or alternative) would cause certain revenues to be generated while simultaneously causing area jurisdictions to incur certain expenditures. The fiscal balance, or imbalance, thus created between generated revenues/incurred expenditures significantly affects the eventual magnitude and adversity of social impacts resultant from the action underway.

To determine the fiscal impact of the proposed action, and thus to characterize socioeconomic impact as to beneficial/adverse conditions, conservative and realistic measures were incorporated into the analyses. As briefly detailed in Section 1.4.2, the calculations of project generated revenues were conducted on a directly traceable dollar basis (i.e., tax monies generated by the project and project personnel were directly calculated and traced from origin through distribution). The use of directly traceable revenues allows an unbiased and accurate quantitative establishment of definitive monies that are specific to the project but results in an understated revenue value. Understated revenues result due to the fact that some generated tax monies, particularly those within the General State Fund (see latter discussion), cannot be distributed in a manner allowing analytical inclusion to this Technical Report. Additionally, local economies often receive external financing beyond direct tax money return which involves per capita basis requirements (e.g. grants). The use of directly traceable dollars to project revenues, therefore, results in the presentation of generated revenues which do not include General State Fund Monies or per capita special external finance monies commonly utilized by the affected jurisdictions.

The alternative method of revenue establishment would have involved use of a per-capita (\$/person population) estimation procedure which assumes certain set revenue/expenditure values per person and disregards money source. The per-capita method would require use of data not developed specific to the



project. Use of a per-capita revenue estimation procedure was considered to be less suitable than the direct dollar trace method and was, therefore, not utilized for final impact assessment procedures.

The second factor in the fiscal analysis involved the measure of revenues distribution to assess expenditure balance or imbalance. The distribution of project generated revenues to each jurisdiction was also calculated on the basis of direct traceability. Due to Nevada state tax laws, this method of calculation resulted in an underestimate of distributed revenues to the jurisdictions because a large proportion of tax revenues (35 percent of state sales tax) are obtained and distributed by the State under the State General Fund program in a manner not allowing definitive assumptions regarding final destination. Consequently, the calculations of fiscal impacts shown herein are conservative since redistribution of these funds to affected jurisdictions is not included in the analysis to evaluate the offset of impacts. Later discussion documents the quantity of such monies but does not account for distribution.

The third factor in the fiscal analysis (a per-capita determination of jurisdiction expenditures) resulted in a response to the socioeconomic framework of the Eureka area which due to the low population density of the affected Eureka jurisdictions (county, town, school) is highly sensitive to population alterations of even minor extent. Superimposing the tripling of population anticipated upon the jurisdictional frameworks without consideration of economies of scales and without deemphasizing special external financing would result in a significant overstatement of eventual realized expenditures.

Thus expenditures were calculated for both direct and secondary (non-EXXON) generated populations using a project specific per-capita rate (1980-1983 budget basis). The fiscal expenditures calculated represent the most-probable case, reflecting the population and direct cost modified per capita rate anticipated through project implementations. The anticipated expenditures of the affected jurisdictions as calculated are discussed in the latter part of this subsection.



Generated Tax Revenues - Summary of Results. The initial 50 years of project activity would result in about 123 million dollars (approximate round number) being generated in tax monies. Of the total being generated, approximately 102 million dollars would be directly distributed to the affected jurisdictions. The remaining balance of approximately 21 million dollars would represent monies retained and indirectly distributed through the State General Fund (2.0 of 5.75 percent State Sales Tax). Although monies can be distributed to particular cost accounts of the jurisdictions of origin, state law does not require it.

As detailed previously, State General Fund monies (totaling 21.6 million dollars) have not been included in the budget balance analyses or projected jurisdictional revenues which follow. While it may be assumed that significant General Fund monies would eventually be distributed to the originating jurisdiction, the quantification of those monies distributed is a decision undertaken by legislative action as influenced by local, regional and state needs. As briefly outlined in a later discussion, distribution of General Fund monies to school jurisdictions in Eureka and Elko Counties has historically exceeded the amounts paid in. The following subsections detail certain aspects of past General Fund monies distribution and in summary, note that the distribution of General Fund monies occurs via sector title (i.e., public safety, highways) rather than according to the local jurisdiction receiving state aid. The manner in which distributions occur involves variable equations which may change annually to reflect current perceptions of need. The determination of need is subject to legislative and political entity review.

The most notable return to local jurisdictions is in the form of the Distributive School Fund, which is separate from the 1.5 percent school support tax, and which originates out of the General Fund, accompanied by funds derived from four other sources. This second co-mingling of funds, and other, specific, aids to school programs (school lunch, vocational education, etc.) not a part of the Distributive School Fund but also originating from the General Fund, aids public schools in greater amount than the original 2 percent sales tax paid in by all local jurisdictions. In FY 1982 and 1983, such aid was 131.8 percent and 166.1 percent, respectively, of the 2 percent paid in to the General Fund; of the original 2 percent sales tax



paid in, 91 percent and 117 percent, respectively, was returned to public schools in the form of the Distributive School Fund.

The forecasts of Eureka and Elko School District revenues analyzed do not include the return of the 2 percent State Sales Tax in the Distributive School Fund, nor of the specific aids separate from this fund named above. In FY 1982, the Distributive School Fund paid to Eureka 4.2 times, and to Elko 1.9 times, the amounts recorded as paid in by these counties in the form of the 2 percent sales tax. However, these returns to elementary and secondary public schools are by complex computerized formulas, which are characterized by annually changing externally-given parameters as well as internal relationships. The significance of this distribution, while not forecasted herein, would be expected to be major in terms of additional monies being received by the affected jurisdiction.

Project generated taxes which would be dispersed to the seven jurisdictions are detailed in Table 3-24 for the proposed action, Case 5-A Subdivision. Generated taxes do vary based on the locale of population residency, thus the alternative Case 5-B would result in differing fiscal impacts. The Case 5-B impacts are discussed in Section 3.5.4.

As indicated by Table 3-24, maximum receipt of direct distribution project tax revenue under Case 5-A for the seven districts combined would occur after 2.5 years of project initiation and would total \$2,383,300. Tax revenues would stabilize in year 12 and would total \$2,399,600. (Rounding of numbers not conducted to allow cross referencing with sections data of this Technical Report.)

The revenues shown on Table 3-24 include residential property taxes, personal sales tax, mine/process plant property taxes and net proceeds tax derived from the project.

Expenditures of Affected Jurisdictions - Summary Details. The annual budgets in the most recent period for each of the seven jurisdictions were examined to define recurrent operating revenues and expenditures by type. Capital outlays, opening balances and closing balance carryovers were eliminated.



Mt. Hope Molybdenum Project

Table 3-24 Annual Tax Revenues Generated by the Project and Distributed to Jurisdictions (1982\$)<sup>1/</sup>  
Subdivision Case 5-A

Year	Eureka County	Eureka Schools	Eureka Town	Elko County	Elko Schools	Elko City	Carlin Town	(TOTAL)
1 (2 Qts)	189,900	120,900	0	100	100	200	0	(311,200)
2	845,000	546,600	500	2,400	2,200	4,400	900	(1,402,100)
3	1,341,000	1,016,300	900	6,400	9,000	7,300	1,500	(2,383,300)
4	909,000	877,000	1,300	7,500	11,200	7,500	1,500	(1,815,000)
5	1,009,000	1,138,000	1,400	7,100	10,300	7,300	1,500	(2,174,600)
6	1,020,000	1,138,000	1,400	7,100	10,300	7,300	1,500	(2,185,600)
7	1,020,000	1,160,000	1,400	7,100	10,300	7,300	1,500	(2,207,600)
8	1,020,000	1,160,000	1,400	7,100	10,300	7,300	1,500	(2,207,600)
9	1,020,000	1,160,000	1,400	7,100	10,300	7,300	1,500	(2,207,600)
10	1,020,000	1,160,000	1,400	7,100	10,300	7,300	1,500	(2,207,600)
11	1,118,000	1,254,000	1,400	7,100	10,300	7,300	1,500	(2,207,600)
12	1,118,000	1,254,000	1,500	7,100	10,300	7,300	1,500	(2,399,600)
13	1,118,000	1,254,000	1,500	7,100	10,300	7,300	1,500	(2,399,600)
14	1,118,000	1,254,000	1,500	7,100	10,300	7,300	1,500	(2,399,600)
15	1,118,000	1,254,000	1,500	7,100	10,300	7,300	1,500	(2,399,600)
16-502/	-	-	-	-	-	-	-	-

<sup>1/</sup> Does not include revenues retained by State for County-City Relief Tax (CCRT), Supplemental County-City Relief Tax (SCCRT); Ad Valorm Property Taxes lag one yer from year incurred.

<sup>2/</sup> Years 16-50 no significant variation.

Source: WRC EIS Team



The purpose of the budget analysis was to define the source and the amount of revenue, and the departmental expenditures by type which are normal to ordinary operations. The existing population and the facilities and services to serve that population were presumed to give rise to these "normal" levels of revenues and expenditures. This presumes that all facilities and services which the normal population requires are in place and that future changes in revenue or expenditure would be in direct response to changes in population only. In this way, incremental population changes of the proposed action are measurable in their effects upon future revenues and expenditures.

The per capita expenditures of the jurisdictions for both normal and new populations provided a basis for estimating the expected increase in normal operating budgets (existing budget details and associated per capita rates (status quo, 1980-83) are summarized by jurisdiction in Tables 3-33 and 3-36, Section 3.4.4.3.

Projects expenditures for each of the seven affected jurisdictions are presented in Table 3-25. The estimation of future expenditures was calculated for final analysis at the population/direct cost modified per capita rate, the results shown on Table 3-25.

As indicated in a later discussion, considerable variation exists between the status quo per capita (1980-83) and per student costs rates of Elko and Eureka County school districts: \$1,080.78 per capita and \$5,687.33 per student for Eureka; \$282.04 per capita and \$2,222.36 per student for Elko. The analytical review of status quo per capita expenditure calculations clearly indicated the inevitable overstatement of real costs if a linear function not responsive to economics of scale was assumed. Table 3-26 illustrates the effect of population upon average cost per student based on the analysis of the Nevada's 17 school districts.

In combination with the dependency of the jurisdiction budgets upon special revenue supplements from external sources, the necessity of establishing a population basis for forecasting future expenditures was further analyzed.



Mt. Hope Molybdenum Project

Table 3-25 Net Project-Related Mid-Term Budgetary Shortfalls in Individual Accounts <sup>1/</sup>  
Proposed Action (\$000)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Decentralized Workforce Case 5-B															
Eureka County															
Expenditures	628	1,692	1,026	1,020	1,015	1,004	1,000	995	982	886	980	976	972	966	963
Revenues	190	845	1,341	909	1,009	1,020	1,020	1,020	1,020	1,020	1,118	1,118	1,118	1,118	1,118
Balance	-438	-847	315	-111	-6	16	20	252	25	134	138	142	146	152	155
Eureka Schools															
Expenditures	286	809	736	710	686	663	640	626	612	600	585	572	558	543	529
Revenues	121	547	1,016	877	1,138	1,138	1,160	1,160	1,160	1,160	1,254	1,254	1,254	1,254	1,254
Balance	-165	-262	280	167	452	475	520	534	534	560	669	682	696	711	725
Eureka Town															
Expenditures	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Revenues	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Balance	-56	-55	-55	-55	-55	-55	-55	-55	-55	-55	-55	-55	-55	-55	-55
Elko County															
Expenditures	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Revenues	0	2	6	7	7	7	7	7	7	7	7	7	7	7	7
Balance	-32	-30	-26	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
Elko Schools															
Expenditures	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Revenues	0	2	9	11	10	10	10	10	10	10	10	10	10	10	10
Balance	-101	-92	-92	-90	-91	-91	-91	-91	-91	-91	-91	-91	-91	-91	-91
Elko															
Expenditures	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Revenues	0	4	7	7	7	7	7	7	7	7	7	7	7	7	7
Balance	-50	-46	-43	-43	-43	-43	-43	-43	-43	-43	-43	-43	-43	-43	-43
Carlin															
Expenditures	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Revenues	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Balance	-3	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
TOTAL															
Expenditures	1,156	2,743	2,004	1,972	1,943	1,909	1,882	1,863	1,836	1,728	1,807	1,790	1,772	1,751	1,734
Revenues	311	1,402	2,381	1,813	2,173	2,184	2,206	2,206	2,206	2,206	2,398	2,398	2,398	2,398	2,398
Balance	-845	-1,341	377	-159	230	275	324	343	370	478	591	608	626	647	664
General State Fund <sup>2/</sup>	156	609	973	539	504	504	504	504	504	504	574	574	574	574	574

<sup>1/</sup> These figures do not include total revenues and expenditures of the related local jurisdictional budgets.

<sup>2/</sup> General State Fund - monies generated from project and paid in to General State Fund. Such monies, available for redistribution throughout the State, have not been input to offset or enhance budgetary shortfalls or surpluses, respectively.

Source: WRC EIS Team



Mt. Hope Molybdenum Project

Table 3-26 Expenditures Per Student For Five Most Directly Applicable Teaching Costs

<u>Budget (1980)</u>	<u>Eureka</u>	<u>Elko</u>	<u>State Average</u>
	<u>(Dollar costs per student)</u>		
Administration			
Instruction	1,994	1,243	1,131
Transportation	645	101	79
Operation			
Maintenance	602	184	189
Employees'			
Retirement			
Insurance	413	236	205
Equipment for			
Administration			
Instruction	53	5	11
Total Direct			
Teaching Costs	3,707	1,769	1,615
Excluded			
Outlays	758	138	126

Source: WRC EIS Team



As discussed briefly in Section 1.4.2, a linear regression analysis was made of the relationship between Eureka County populations and expenditure levels and those of Mineral, Humboldt, Lyon and Elko Counties for the period ending June 30, 1982. These populations were, respectively, 1,395, 6,286, 11,816, 15,235 and 19,875, thus permitting step-wise comparisons of five expenditure items common to each county, and the total of these items, as costs per capita. The analysis furnished a predictive model of declining per capita costs as population rises. An identical analysis was made of the Eureka School District with five low-enrollment school districts, using available data of 1979 and 1980. Enrollments of 114, 173, 190, 700, 907 and 911, provided the step-wise increases needed to supply a predictive model of per student costs at different levels of enrollment. The resulting forecast for Eureka School District expenditures indicated an annually declining cost per student based on the anticipated population influx of the proposed action.

Town of Eureka per capita budgeting was not subjected to regression analysis effects due to the diversity and statistical unreliability that its base population and county financing in comparison with other similar entities presented.

An Elko model was not formulated, because of insufficient numbers of counties or districts larger in size to provide reasonable measures of cost relationships with larger populations. This was because only one larger county of 34,000 population supplied a single reference point. Further step-wise progression was made unreliable by the extreme increase in the remaining two counties' populations of 208,000 and 525,000 compared to the relatively small increases in Elko County populations which are forecasted. The same problem disallowed further extended analysis of the Elko School District. Expenditure projects for Elko County jurisdictions were therefore calculated by extrapolation of status quo per capita rates, as exhibited by 1980-83 budgets.

The regression analysis indicated that without project influence (continued baseline growth trends), normal Eureka County school expenditures (as direct teaching costs, 81.5 percent of total in 1979-1980) are expected to decline as per student expenditures from \$4,702 to \$4,092 during the period



of 1984-2000. In the case of higher local school enrollments under the proposed action, the per student costs would further decline from \$4,437 to \$3,119 (first year, 34 percent student enrollment increase). The resultant forecast of these per student costs in terms of annual total expenditures is shown on Table 3-25.

The regression analysis and expenditure/revenue determinations indicate that the aggregate jurisdiction budgets would initially expend 1.156 million dollars with revenues of 311,000 dollars (year 1, Table 3-25). The resultant budget deficit of \$845,000 would be offset thereafter by budget surpluses of \$230,000 (year 5) to \$664,000 (stabilized, year 15).

Table 3-25 further indicates, however, that the aggregate budget surpluses are heavily influenced by the major budget balances of Eureka County and Eureka School District having a total budget balance surplus of \$880,000. Eureka Town and Elko jurisdictions would each incur budget deficits, in the aggregate totalling a negative \$216,000. The significance of this disparity is discussed in the following.

Eureka County School District revenues would exceed expenditures by year 2.5 of proposed action start-up and would remain in surplus for the forecast period. The modified per capita rate expenditures calculated indicate that upon annual stabilization an annual budget balance surplus of \$725,000 (without State General Fund monies) would be anticipated. In addition to the budget results indicated substantial monies would be expected as distributed revenue per the State General Fund (not included as forecasted revenue in the analysis).

As with school enrollment economies of scale, county population dependency was noted in the comparison of Eureka and four other counties. When expressed as expenditures per capita, Table 3-26, the levels of comparative cost show a tendency to decline rapidly as population rises. Utilizing the detailed expenditure data of the counties examined, the county expenditure regression analysis was prepared with output representing the population/direct cost modified per capita rate.



Per the regression analysis, county costs per capita were shown to decrease from \$773 to \$733 under "normal" (no project influence) conditions for the period 1984 to year 2000. Under the conditions of the proposed action, initial per capita costs would equate to 734 (assuming first year influence 1984), with subsequent reductions to a \$679 per capita cost. The budgetary forecast for Eureka County shows a surplus of revenues over expenditures as early as year 2.5. Deficits reappear however, for the following two years with surpluses thereafter through the forecast. A main cause of this early surplus, and subsequent fluctuation, is a peak sales tax revenue earned from mine/mill expenditures for equipment and supplies in the year of opening, 45 percent greater than the year following.

As Table 3-25 further indicates, the Town of Eureka would incur an excess of project related expenses compared to revenues. The net annual project related deficits would total approximately \$55,000. Excepting certain years (1, 2, 4 and 5), the Eureka County budget surpluses would be sufficient to ameliorate the Town budget deficits. In total, however, the first 10-year period of project implementation indicates an aggregate County-Town deficit of 1.4 million dollars. As discussed in Chapter 2.0, the Town of Eureka is financed primarily by county funding. Assuming that no changes were to occur in county funding, the anticipated Town budget deficits would represent a significant adverse impact with or without county financial support. Alternate means of financing (external source) or reduced project related expenditures would be required to offset the anticipated budget deficits. As stated previously, the projected revenue/expenditure budgets do not include State General Fund monies, a major source of available funds. These funds total \$5.3 million in the first 10-year period and, hence, represent a viable, project specific source of monies generated to offset budgetary impacts. The outlay of these monies has not been assumed but it would be expected that substantial justification for such distribution could be presented to the legislature.

While Elko jurisdiction budget deficits would occur, they quantitatively represent low percentage contributions to total budget allocations. For example, the \$91,000 Elko School District deficit represents less than one percent of total annual budget dollars. Without inclusion of State General



Fund monies however, no manner of direct mitigation was identified to offset the anticipated deficits (as opposed to county financing of Town in Eureka). As in the case of Eureka Town/County deficit mitigation potential, it would be expected that substantial justification for state fund distributed monies could be presented by Elko entities to the legislature.

Impact Summary. The fiscal analyses conducted to assess the impacts upon public finance of implementing the proposed action indicate the following, based on the plans to date and as documented in this Technical Report.

- If implemented, the proposed action would result in the generation of tax dollars totaling 123.3 million dollars over a 50-year period.
- Of the tax monies generated, 21.6 million dollars or 17.5 percent of the total would be distributed within the auspices of the State General Fund program. The manner and amount of distribution has not been predicted in the analyses presented in this Technical Report. Jurisdictional revenues are therefore underestimated if past experience holds true. Specifically, the affected jurisdictions most frequently receive (directly or indirectly) General State Fund monies far in excess of that originating in the jurisdiction. As documented in Appendix E of the EIS, it is probable that at least the retained monies (21.6 million dollars) would be distributed to the seven affected jurisdictions.
- Forecasting by use of status-quo per capita rates, while allowing use of quantitative data unaffected by assumptions or historical conditions, is considered unrealistic due to the sensitivity of the Eureka socioeconomic frameworks in terms of population influence. Such forecasting disregards historical and financial management trends that clearly illustrate valid reduction in per capita costs as a result of economies-of-scale.



- Incorporating factors involving economies-of-scale, based on Nevada State data bases, indicates the most probable case of annual revenues exceeding expenditures, thus resulting in Eureka jurisdictional budget surpluses as an aggregate total.

Elko jurisdictions would be expected to experience excess project expenditures relative to project generated revenues. This can be anticipated in light of the manner in which tax revenues (excepting State General Fund monies) are directly distributed in return to the originating jurisdiction. The expected distribution of the project generated revenues would be weighted heavily in favor of Eureka-based jurisdictions.

- Analysis of previous Eureka Town budget funding indicates substantial reliance upon external source financing, particularly Eureka County support. The forecasted proposed action impacts indicate that such external source financing would need to continue in order that budget deficits be ameliorated.
- In total, project generated tax monies would exceed annual jurisdictional expenditures except in years 1, 2 and 4. As Table 3-25 indicates, normal recurrent budget surpluses (in total) from year 5 would approximate \$730,000 to \$1.2 million annually in year 15.

#### 3.4.4.2 Fiscal Impact Calculations - Generated Tax Revenues

As stated in the previous subsection, it has been calculated that during the initial 50 years of Mt. Hope project activity (as proposed) approximately 123 million dollars would be generated as tax monies. As also detailed, the manner of calculating tax revenues generated involved the use of a direct-traceable dollar methodology in order that an unbiased and



quantitatively accurate estimate of project specific monies was established. As such, revenue projections were derived wholly from ad valorem and sales taxes directly affecting the operation of the mine/process plant and its employees, and have not been derived from per capita extrapolations which might be indicated by present tax rates and populations of the Eureka and Elko jurisdictions.

This subsection details the specifics utilized to forecast project generated tax revenues, both in total and as distributed. To conveniently categorize generated revenues, the discussion is presented as the analysis was generally conducted, i.e., revenues generated and directly attributable to the increased population, revenues generated by actual mining activity (e.g. mining proceeds tax), and revenues which would be received by individual jurisdiction. It should be noted that while the proposed action would result in a certain amount of tax revenues being paid, not all monies paid would return to the jurisdictions within Eureka and Elko counties. Thus, the revenue calculations pertinent to jurisdictional receipt of revenues are different than the total revenues paid into by the proposed action supporter (i.e. EXXON Minerals Company). The discussion that follows isolates the revenue generated by operations (which would be subsequently dispersed to state, county, city, etc.) and the actual revenue dispersed to the jurisdictional entities of concern.

Personal Spending and Sales Taxes. The spending of EXXON's mine/process plant employees on normal personal and household items has been categorized in Table 3-27. Estimated average annual gross incomes have been used to arrive at net disposable income after federal taxes, and the disposition of this income among 15 normal expenditure items, including an allocation to personal savings. This calculation produced an array of taxable and non-taxable items, and a level of sales taxes annually paid according to sales tax rates in effect at the present time in the State of Nevada. In summary, total annual income of operating personnel at the Mt. Hope project would exceed 11 million dollars. EXXON employees and families would personally spend in excess of approximately 7.5 million dollars (after 20 percent tax reduction) annually in a total of 15 expenditure categories.



Mt. Hope Molybdenum Project

Table 3-27 Mine/Process Plant Personal Spending and Tax Consequences (Estimated)

	Number	Single	Married	Average Incomes	
1) Direct Project Hires (Non-Local)					
Professional	117	23	94	\$29,000	
Other	408	82	326	15,000	
		Gross	After Fed. Tax		
2) Total Annual Incomes:					
Professional		\$3,393,000	(70 percent)	2,375,100	
Other		6,120,000	(85 percent)	5,202,000	
Total		9,513,000	(80 percent)	7,577,100	
Sales Taxes					
	<u>Percent</u>	<u>Annual \$</u>	<u>Amount \$</u>	<u>Kind</u>	<u>Percent</u>
3) Spending Levels					
Housing	30	2,273,130	0		
Electr.	4	303,084	0		
Water	3	227,313	0		
Heat	6	454,626	0		
Food	30	2,273,130	0		
Gasoline	7	530,397	42,840	\$1.30/gal (407,988 gals.)	51.77
Clothing	5	378,855	14,207	* 3.75 percent net	17.17
Liquor	1	75,771	2,589	\$60.00/gal (1,263 gals. )	
Beer	2	151,542	2,273	\$ 4.00/gal (37,885 gals.)	5.88
Savings	2	151,542	0		
Household	4	303,084	11,366	* 3.75 percent net	= 13.73
Medical	3	227,313	0		
Recreation	1	75,771	0		
Cigarettes	1	75,771	9,471	\$0.80/pack (94,714 packs)	11.45
Insurance, etc.	1	75,771	0		
Total:		<u>\$7,577,100</u>	<u>\$82,746</u>		<u>100.00</u>
4) Per Capita (1,236)					
		\$ 66.95			

\*Net of 2 percent to State Fund



State of Nevada Sales Taxes are of the following kinds:

Total rate: 5.75 percent

(of which):

2.0 percent to State General Fund  
1.5 percent to Local School Support  
0.5 percent to County-City Relief (CCRT)  
1.75 percent to Supplemental CCRT

In addition to the above, State Sales taxes apply to:

gasoline:	10.5 cents per gallon	
liquor:	distilled spirits	\$2.05/gallon
	fortified wines	.50/gallon
	light wines	.30/gallon
	beer	.06/gallon

As indicated by Table 3-27, the Nevada Sales Tax levies apply to six of the normal 15 expenditure categories. For the operations population of 1,236 on site from the third quarter of year four, a total expenditure level of \$7,577,100 annually would generate \$82,746 in sales tax revenues. Tax revenues would be derived from the following:

- 1) Gasoline: 51.77 percent of total, or 10.5 cents on 407,998 gallons, or average consumption per employed operations worker (640) of 637 gallons annually, or 1.93 gallons per 330 workdays, or 37 miles each workday at 19 miles per gallon.
- 2) Clothing and household items: 17.17 percent and 13.73 percent of total, or 5 percent and 4 percent of total disposable income.



- 3) Cigarettes: 11.45 percent of total, or 94,714 packs per year, consumed by 40.5 percent of 640 operations workers over 365 days.
- 4) Liquor and beer: 5.88 percent of total; 1,263 gallons liquor annually consumed by 640 operations workers, or 0.0054 gallons daily (0.042 pints); plus 37,885 gallons of beer annually, or 0.162 gallons daily, or 1.3 pints per average worker per day.

The distribution of these various sales taxes to the local jurisdictions in which the operations workers live, work, or transact domestic business would be partly determined by need, and partly by location. That is, spending in Eureka County would accrue tax revenues to Eureka jurisdictions of County, School Districts, and the Town of Eureka; and spending in Elko County would accrue to Elko County jurisdictions alone. Table 3-28 sets forth the anticipated revenue distributions of each county, both as the percentage and dollar amounts, which would go to County, School Districts, and Towns. The derivation of these sums is explained as a composite of the general sales tax rate and of the specific levies on gasoline, cigarettes and liquor. The composition of these revenues produces a unique distribution, because individual levies are earmarked for specific budget supports and not for others.

However, because of earmarking, fully 2 percent of the 5.75 percent general sales tax would be lost to local jurisdictions entirely (34.78 percent of the total) as this amount goes to the State General Fund. Gasoline levies of 10.5 cents/gallon would be reduced to 2.5 cents as the county portion. Cigarette and liquor-and-beer tax revenues would go directly to county and city jurisdictions. These adjustments to the tax levies require a re-statement of percentage amounts provided by each as part of the total tax burden of personal sales taxation, followed by a further re-statement of these taxes as revenues to individual jurisdictions receiving the funds.

The personal sales tax represents \$66.95 per capita expenditure annually for the 1,236 mine/process plant operations population. This same rate has been extended to the 539 population of generated secondarily



Mt. Hope Molybdenum Project

Table 3-28 Sales Taxes Paid by Individuals - \$66.95 Per Capita/Year

		<u>County</u>	<u>Schools</u>	<u>Elko</u>	<u>Eureka</u>	<u>Carlin</u>
<u>Eureka</u>	As percent	79.31	20.41	-	0.28	-
x \$66.95/capita						
a)	as percent/year	<u>53.09</u>	<u>13.65</u>	-	<u>0.19</u>	-
b)	percent quarterly	<u>13.27</u>	<u>3.41</u>	-	<u>0.047</u>	-
<u>Elko</u>	As percent	23.83	20.41	45.35	-	10.41
x \$66.95/capita						
a)	as percent/year	<u>15.95</u>	<u>13.65</u>	<u>30.36</u>	-	<u>6.96</u>
b)	percent quarterly	<u>3.99</u>	<u>3.41</u>	<u>7.59</u>	-	<u>1.74</u>
		(1)	(2)	(3)	(4)	(5)

	<u>Rate</u>	<u>As Percent</u>	<u>General Sales</u>		<u>New</u>
	<u>Percent</u>	<u>\$66.95</u>	<u>Total Tax Distrib.</u>		<u>Percent</u>
		<u>Paid</u>	<u>Percent</u>	<u>(Adj. Percent)</u>	
(A) <u>Explanation:</u>					
1) Sales Tax,					
General	<u>5.75</u>				
Schools	<u>1.5</u>	-	= .40 x 30.90 =	12.36	20.91
CCRT	<u>0.5</u>	-	= .133 x 30.90 =	4.11	6.79
Supplem. CCRT	<u>1.75</u>	-	= .467 x 30.90 =	14.43	23.83
(State General					
Fund)	<u>(2.00)</u>				
Subtotal	<u>3.75</u>	30.90			
2) Gasoline (Roads					
Streets)		51.77	x .238	= 12.32	20.35
			(\$0.025)		
3) Cigarettes					
(County, City)		11.45	x 1.00	= 11.45	18.91
			(\$0.10)		
4) Liquor, Beer					
(County, City)		5.88	x 1.00	= 5.88	9.71
Total		<u>100.00</u>		<u>60.55</u>	<u>100.00</u>

	<u>Percent</u>	<u>Eureka/Elko</u>		<u>Schools</u>	<u>Elko</u>	<u>Eureka</u>	<u>Carlin</u>
		<u>Counties</u>					
(B) <u>Distributed To:</u>							
School	(20.41)	0	- 0	20.41	0	0	0
CCRTS 1 and 2	(30.62)	30.34	- 15.45	0	13.26	0.28	1.91
Gasoline	(20.35)	20.35	- 6.32	0	8.81	0	5.22
Cigarettes	(18.91)	18.91	- 2.06	0	14.77	0	2.08
Liquor	(9.71)	9.71	- 0	0	8.51	0	1.20
Total:		79.31	23.83	20.41	45.35	0.28	10.41



employed, thereby covering 1,775 persons annually through the forecast period. Quarterly rates amounting to one-fourth the above rate have been applied to the populations of construction workers and operations and generated populations during the start-up period. Local hires have been excluded from these calculations, as their former employments are uncertain and may not contribute to the incremental tax revenues of the proposed action.

For the total population of 1,775 persons, an annual sales tax revenue volume of \$118,836 would be generated through the forecast period (\$82,746 attributable to direct hires). The amounts of sales tax revenues produced in Eureka, Elko and Carlin (before distribution) are shown on Table 3-29. By county, the annual sum of sales tax revenues generated would be as follows under the proposed action Case 5-A: Eureka - \$105,170; Elko - \$13,660.

Ad Valorem Residential Property Tax Revenues. As discussed in Section 3.4.3, selected housing by direct-hire and secondarily employed populations in the towns of Eureka, Elko and Carlin would be distributed among single family homes (24 percent), apartment units (32 percent), and mobile homes (44 percent). Table 3-21 (Section 3.4.3, Housing) indicates the ad valorem residential property tax revenues incurred quarterly during the first four years of startup. As discussed on page 3-49, Section 3.4.3, housing values were established as follows for fiscal impact purposes: single family units, \$75,000 each; multi-unit and mobile home, \$35,000 each. Residential ad valorm property tax revenues of Eureka county and Elko County were then applied to these properties at rates per dollar of assessed value (35 percent of market) of 0.00748 for Eureka, and 0.01176 for Elko. Quarterly revenues from ad valorem taxation were taken at one-fourth of these rates, or 0.000654 and 0.001029, respectively. The higher Elko County ad valorem property tax rate would produce higher per unit revenues, but lower total revenues as fewer units would be in demand in Elko County than in Eureka County.

Table 3-30 shows the forecast of stabilized annual ad valorem residential property tax revenues accruing to Eureka and Elko Counties under Case 5-A. The sustained revenue volume levels reflect stabilized populations,



Mt. Hope Molybdenum Project

Table 3-29 Forecast Project Populations and Characteristics: Direct-Hire and Generated

Subdivision Case 5-A (Constant Workforce)									
(From) 1987									
Local Hires Excluded									
Year 4, 3Q	Direct Hire	Gener-ated	Total	House holds	Population	School	Sales* Taxes (1987-2030)	Total \$ Taxes Eureka	Elko
A Eureka Town Area									
1) Subdivision									
Single	93	0	93						
Married	368	0	368						
H.Holds	284	0	284						
Popul.	994	0	994						
School	199	0	199						
2) Eureka Other				168	484	88	32,400		
Single	10	31	41						
Married	43	123	166						
H.Holds	32	95	127						
Popul.	112	331	443						
School	22	66	88						
B Elko				67	195	35	13,060		
Single	2	14	16						
Married	9	58	67						
H.Holds	7	44	51						
Popul.	25	154	179						
School	5	30	35						
C Carlin				3	9	2	600		
Single	0	1	1						
Married	0	3	3						
H.Holds	0	2	2						
Popul.	0	8	8						
School	0	2	2						
Total	1,236	539		615	1,775	324	118,836		

\*\$66.95 per capita



Mt. Hope Molybdenum Project

Table 3-30 Distribution of Ad Valorem Residential Property Tax Revenues Annually  
Eureka and Elko Counties (\$)

	Percent Distribution	Year 4	Sustained
I. Subdivision 5-A			
Eureka Total			
Schools	66.66	82,810	86,620
County	32.37	55,670	58,230
Town	0.137	27,030	28,270
		110	120
Elko Total			
Schools	54.40	13,960	12,530
County	27.454	8,370	7,510
Town	0.527	4,220	3,790
City	8.369	80	80
		1,290	1,150



as construction workers have departed and no new generated populations are arriving. Comparative effects of Case 5-A and Case 5-B (Section 3.5.4) indicate a broadened distribution of residential taxes under the Dispersed Personnel Case (5-B), by which a 21 percent reduction in Eureka County revenues (from \$86,620 to \$68,280) produces a 3.7 times increase in Elko County revenues (from \$12,530 to \$43,280).

This change in revenues would arise from the changed population distribution as the Elko County population of 204 under Case 5-A would increase to 667 under Case 5-B, a 3.4 times increase. Because preponderant populations remain in Eureka County in both Cases 5-A and 5-B, Eureka County revenues from residential property exceeds that of Elko.

Tax Revenues Generated Directly by Corporate Operations. As for the tax revenues generated by the employment base purchase of real and personal property (e.g. housing, cars, washing machines, etc.) the development of the Mt. Hope ore body would similarly result in significant revenue generation through the taxes paid on the estimated market value of mine/process plant facilities (ad valorem) and equipment/supply purchases (sales tax). The Mt. Hope development would, however, additionally result in substantial revenues being generated by the levy of the Eureka County net mining proceeds tax. The assessment of net proceeds taxing encompasses the value of products and by-products generated by the actual mine/process plant operations.

The direct tax revenues generated by the corporate operations of EXXON Minerals Company, paid in sales taxes and in ad valorem property taxes during the forecast period, have been grouped together in a single table for convenient reference. On Table 3-31 the estimated market value basis of the mine/process plant and of annual net proceeds are shown as the ad valorem tax base. The estimated market value basis and net proceeds taxing information was provided by EXXON Minerals Company. Their assessed values at 35 percent of market are calculated and the annual tax revenues are derived. For the period following year 5, the forecast is provided in 5-year intervals, according to the changes in average estimated values which would occur at these same 5-year intervals. Resulting tax revenues are expressed on an annual basis.



Mt. Hope Molybdenum Project

Table 3-31 Sales and Ad Valorem Mine/Process Plant Property Tax Base, Tax Revenues Collectible and Tax Revenues Distribution - Eureka County

Market Values:	Year:	1	2	3	4	5	10	15	20	25	30	35
Mine/Process Plant (\$ Process Plant)	30	123	201	201	201	201	208	229	248	260	260	260
Net Proceeds (\$ Process Plant)	0	0	9	66	66	66	68	69	65	66	66	66
<b>Taxes Incurred</b>												
1) Sales Tax (5.75 percent) on Expenditures during Mine Construction and Operations												
Tax: (\$000)	450	1,750	2,800	1,550	1,450	1,450	1,450	1,650	1,100	1,100	1,100	1,100
2) Eureka County Ad Valorem Property Tax (.00748) on 35% (Assessed Value)												
Assessed Value: (\$000)												
a) Mine/Process Plant (.35)	10,500	43,050	70,350	70,350	70,350	70,350	72,800	80,150	86,800	91,000	91,000	91,000
Tax: (\$000)	78,540	322,014	526,218	526,218	526,218	526,218	544,544	599,522	649,264	680,680	680,680	680,680
Assessed Value (\$000)												
b) Net Proceeds (.35)	0	0	67,320	493,680	493,680	493,680	508,640	516,120	486,200	493,680	493,680	493,680
Tax: (\$)												
c) Total a+b (%)	78,540	322,014	593,538	1,019,898	1,019,898	1,019,898	1,053,184	1,115,642	1,135,464	1,174,360	1,174,360	1,174,360

Distribution:	%	(In \$)	(Eureka County)
<b>1. Sales Tax*</b>			
School Support	.6500	117,405	456,575
CCRT	.08695	39,127	152,162
Suppl. CCRT	.30435	136,957	532,612
<b>2. Ad Valorem</b>			
School Support	.6666	52,355	214,654
County	.3237	25,423	104,236
Towns	.00137	107	441
Spec. Distr's.	.00835	656	2,689

\*Total is 65% of 5.75% Sales Tax, or 3.75% Tax Rate excluding 2% to State General Fund.



As noted, sales taxes would additionally be paid on expenditures for supplies and equipment during construction and the operation of the mine/process plant as estimated by EXXON and shown in Table 3-31.

These tax revenues would be distributed to schools, the county and the Town of Eureka (towns). The amount of sales tax revenues generated at the 5.75 percent rate is reduced to 65 percent to correspond to the loss of 35 percent to the State General Fund, which receives 2 percent of the 5.75 percent rate. The distribution of those revenues which remain is then allocated by percentage equal to their present distribution, i.e., school support, 1.5%; county-city relief (CCRT), 0.5%; and supplemental CCRT, 1.75%.

The actual distribution of these proceeds may be to other counties and districts and towns than Eureka. This analysis, however, assumes these revenues from the sales tax would accrue to Eureka alone. To the extent that these revenues leave the County of Eureka, the amounts which are directly traceable to Mt. Hope operations within Eureka are fully accounted herein. The impacts of the monies distributed are presented in following subsections dealing with revenue/expenditure budgets of the jurisdictions.

#### 3.4.4.3 Fiscal Impact Calculations - Distribution of Generated Tax Revenues and Anticipated Expenditures

The revenues distributed to each jurisdiction of interest would directly affect the capability and resources of that jurisdiction to mitigate the impacts of the proposed action caused by increased population and demand for services. The manner in which revenues are distributed is legally outlined, but these outlines vary on an annual or less frequent basis. For the purpose of this analysis revenues were distributed as defined by 1983 law and legislative mandate (i.e. State General Funding). Additionally, historical budgets were evaluated to establish the past record of revenue receipt, both in type and quantity, by the jurisdictions affected.

The following presents a detailed review of historic budgetary trends and how the proposed action might affect these trends both in terms of revenue source and expenditure.



Introductory Review of Historical Revenues and Expenditures. The economic influence of the proposed action, would primarily extend to seven (7) regional jurisdictions:

- 1) Eureka Town
- 2) Eureka County
- 3) Eureka County School District
- 4) Elko City
- 5) Elko County
- 6) Elko County School District
- 7) Carlin

The most recent annual budgets for each of these jurisdictions were examined to define annual ordinary recurrent operating revenues and expenditures by type. Capital outlays, opening balances and closing balance carryovers were eliminated as the purpose of the budget restatement was to define the source and the amount of revenue and the departmental expenditures by type which are normal to ordinary operations. The existing population and the facilities and services to serve that population were presumed to give rise to these "normal" levels of revenues and expenditures. This presumes that all facilities and services which the normal population requires, are in place, and that future changes in revenue or expenditure would be in direct response to changes in population only. In this way, the effects of incremental populations of the Mt. Hope project on future revenues and expenditures would be measurable.

Per capita expenditures of these jurisdictions for both normal and new populations were utilized to provide a basis for estimating the expected increase in normal operating budgets. As noted in the EIS and in this Technical Report, the use of per capita based revenues estimates would provide less certainty, as the estimates would derive partly from sources outside the counties and towns, would sometimes be determined by formula affecting State Sales Tax distributions, and have been irregular over the preceding three fiscal years in amount and by place. Moreover, the Mt. Hope project would result in directly traceable revenues being contributed to the property tax and sales tax revenue base (derived from corporate operations, employees, and



the indirect employment of generated secondary populations). Analysis of both the per capita revenue and expenditure basis and of the directly traceable revenue basis is made herein for comparative purposes.

The jurisdictional budgets are summarized on Table 3-32. Only one of the seven budgets shows a surplus of revenues over expenditures on normal account; when extraordinary items are removed, none of the budgets is in balance. The imbalance is a partial measure of the extent to which total budgets depend upon special supplements to revenues from external sources. The relevant populations within each jurisdiction are also shown on Table 3-32. With this basis, per capita revenues and expenditures were calculated as annual levels on Table 3-33 and as quarterly levels (for the 12-quarter start-up period) on Table 3-34.

Historical annual per capita revenues and expenditures are summarized as follows:

	Historical <u>Per Capita Revenue</u>	Historical <u>Per Capita Expenditure</u>
Eureka Town	\$169.15	\$ 115.56
Eureka County	543.24	795.86
Eureka School	877.47	1,080.78
Elko Town	240.20	257.77
Elko County	93.97	158.13
Elko School	483.06	494.98
Carlin	193.37	282.04

While the per capita figures reveal the imbalance between total revenues and total expenditures, line-item entries must be examined to ascertain the source of this imbalance. In the case of the two school districts, expenditures per student on total account warrant special mention: the cost per student in Eureka School District is 2.5 times that of Elko School District, although total expenditures by Elko were 7.3 times that of Eureka on an annual basis (\$9,373,926 in Elko compared to \$1,279,650 in Eureka). This ambiguity is explained by the far greater number of students in the Elko



Table 3-32 Historical Revenues and Expenditures of Local Jurisdictions (Normal Annual Recurrent)

	1982/83				1981/82			
	Eureka Town	Eureka County	Eureka School District		Elko Town	Carlin Town	Elko County	School District
<b>Revenues</b>								
Local: School Support Ad Val.	98,994	637,694	1,043,441		2,322,200	250,419	1,779,441	9,148,218
Ad Valorem Taxes	433	86,211	107,000					1,986,247
Licenses, Permits, Fees	1,500	35,770	2,500		175,902	19,540	490	1,244,463
Charges: Local		14,500	7,200		312,981	24,680	718,874	18,109
Local			9,500		143,508	3,576	25,891	151,904
Fed: In Lieu Tax	40,000	29,778						
Other			5,500				164,000	
State: CCRT		44,223			567,712	79,861		
Suppl. CCRT	884	319,928			558,961	59,445	567,013	
School Support			525,841					5,395,979
Vehicle	4,137		37,500		85,342	9,002	155,216	351,516
Cigarette		23,033			222,288	31,270		
Liquor		3,751			35,872	5,046		
Gaming	52,000	82,000			69,735	1,350	127,495	
Other/R. E. Transf.		4,000	5,000		48,368	6,058	20,462	
Gasoline					101,531	5,591		
<b>Expenditures</b>								
General Admin.	67,600	982,300	1,279,650		2,492,180	357,906	2,993,817	9,373,926
Roads/Public Works	1,800	87,525	563,471		223,229	57,049	804,948	4,610,305
Utilities/Services/Supplies	8,800	30,900			639,916	96,553	158,066	
	52,000							
Health		110,720						
Fire	5,000	27,500			418,772	3,450	135,268	
Police		228,270			839,054	17,218	108,103	
Other Departments		239,745	532,293			116,018	643,084	
						8,795	558,950	1,352,753
Other		24,230	183,886					
Courts, Justice		124,555			35,999	42,944	586,398	3,410,868
Welfare		32,000						
Culture, Recreation		76,855			335,210	15,879		
Population	585	1,184	1,184		9,668	1,269	18,938	18,938
School Popul.	213	225	225		2,812	318	4,218	4,218

OMITS: Capital outlays, opening balances, closing balances



Mt. Hope Molybdenum Project

Table 3-33 Historical Annual Revenues and Expenditures Per Capita Towns, Counties, School Districts  
(in dollars)

	Eureka Town		County (1982-83)		District		Elko		Carlin County (1981-82)		District	
Revenues	169.15	543.24	877.47	240.20	193.37	93.97	483.06					
Local Ad Valorem	.74	72.81	290.03	18.19	15.40	.03	65.71					
Licenses, Fees	2.56	42.46	16.22	47.22	22.23	39.33	8.98					
School Support	-	-	90.37	-	-	-	104.88					
Federal	68.38	25.15	4.64	-	-	8.66	-					
State CCRT	1.51	307.56	-	116.54	109.78	29.94	-					
School Support	-	-	444.12	-	-	-	284.93					
Sales Tax, Other (Per Student)	95.96	95.26	32.09	58.25	45.96	16.01	18.56					
			(4,637.52)				(2,168.85)					
Expenditures	115.56	795.86	1,080.78	257.77	282.04	158.13	494.98					
Genl. Admin.	3.08	73.92	475.90	23.09	44.96	42.50	243.44					
Public Works/Supplies	103.93	26.10	155.31	66.19	76.09	8.35	-					
Health	-	93.51	-	-	2.72	7.14	-					
Fire	8.55	23.23	-	43.32	13.57	5.71	-					
Police	-	192.80	-	86.79	91.42	33.96	-					
Other Depts.	-	222.95	449.57	-	40.77	29.51	251.54					
Courts, Justice	-	105.20	-	3.72	-	30.96	-					
Welfare	-	27.02	-	-	-	-	-					
Recreation	-	31.13	-	34.67	12.51	-	-					
(Per Student)			(5,687.33)				(2,222.36)					
Population (1983)	585	1,184	1,184	9,668	1,269	18,938	18,938					
School Age (1983)	213	225	225	2,812	318	4,218	4,218					
(% Towns of Total)	(94.67)	-	-	(66.67)	(7.54)	-	-					



Mt. Hope Molybdenum Project

Table 3-34 Historical Quarterly Revenues and Expenditures Per Capita Towns, Counties, School Districts (\$)

	Eureka			Elko		
	Town	County (1982-83)	District	Elko	Carlin (1981-82)	District
Revenues						
Local Ad Valorem	42.31	135.81	218.93	60.00	48.35	23.50
Licenses, Fees	.185	18.20	72.08	4.55	3.85	.0075
School Support	.64	10.61	4.05	11.81	5.56	9.83
Federal	-	-	22.59	-	-	-
State CCRT	17.10	6.29	1.16	-	-	2.17
School Support	.38	76.89	-	29.14	27.45	7.49
Sales Tax, Other	-	-	111.03	-	-	-
(Per Student)	23.99	23.82	8.02	14.56	11.49	71.23
			(1,159.38)			4.64
						(542.21)
Expenditures						
Genl. Admin.	28.89	198.58	270.20	64.45	70.51	39.55
Public Wks/Supplies	.77	18.48	118.98	5.77	11.24	10.63
Health	25.98	6.53	38.83	16.55	19.02	2.09
Fire	-	23.38	-	-	.68	1.79
Police	2.14	5.81	-	10.83	3.39	1.43
Other Depts.	-	48.20	-	21.70	22.86	8.49
Courts, Justice	-	55.74	112.39	-	10.19	7.38
Welfare	-	26.30	-	.93	-	7.74
Recreation	-	6.76	-	-	-	-
(Per Student)	7.78	7.78	(1,421.83)	8.67	3.13	-
						(555.59)
						123.75
						60.86



School District (4,218 compared to 225, which gives rise to per student costs of \$2,222.36 in Elko and \$5,687.33 in Eureka).

Line-item entries for expenditures on General Administration, Public Works, Health, Fire, Police, etc., demonstrate a similar pattern: the costs per capita of population for Eureka County are well above those for Elko County, most likely for the same reasons. These comparisons are as follows:

	<u>Eureka County</u>	<u>Elko County</u>
Expenditures per Capita: (\$)		
General Administration	73.92	42.50
Public Works	26.10	8.35
Health	93.51	7.14
Fire	23.23	5.71
Police	192.80	33.96
Justice	105.20	30.96
Other Depts.	222.95	29.51
Welfare	27.02	not shown
Recreation	<u>31.13</u>	<u>not shown</u>
Total	<u>795.86</u>	<u>158.13</u>

The 1983 Elko County population of 18,938 is 16 times that of the 1983 Eureka County population of 1,184. This comparison further suggests that unit operating costs decline with a rising scale of population. The validity of any fixed current level of per capita expenditures for use in forecasting expected future costs of a government agency must be subject to serious doubt, especially for small populations. The only exception to this inverse function of costs with population appears to be the per capita expenditure levels of the towns: both Elko and Carlin spend more per capita than does Eureka. The exception is inconclusive, however, as both Elko and Carlin provide services out of the town budgets (police, recreation, justice, health, and "other departments") which in the case of the Town of Eureka are apparently provided under the Eureka County budget (see Table 3-33).



Because historical expenditures cannot accurately be used for forecasting future expenditures by local jurisdictions, the study analysis required the investigation of alternative means for evaluating future costs. The alternative means of evaluation most suitable for the EIS purposes was determined to be an examination, via regression analyses, of the probable economies of scale that would be realized as the population influx of the proposed action stabilized and became a consistent component of the regional economic infrastructure. Section 3.3.3, Methods of Fiscal Analysis, details the rationale of methodology selection. The following details the data analysis performed to assure appropriate economies of scale determination.

Economies of Scale Forecasts: As noted in Section 3.3.3 (pages 3-22 and 3-23), a linear regression analysis was made of the relationship between Eureka County populations and expenditure levels and those of Mineral, Humboldt, Lyon and Elko counties for the period ending June 30, 1982. These populations were, respectively, 1,395, 6,286, 11,816, 15,235, and 19,875, permitting step-wise comparisons of five expenditure items common to each county, and the total of these items, as costs per capita. The analysis furnished a predictive model of declining per capita costs for increasing populations.

An identical analysis was made of the Eureka School District with five low-enrollment Nevada school districts, using 1979 and 1980 data. Enrollments of 114, 173, 190, 700, 907 and 911 provided the step-wise increases needed to supply a predictive model of per student costs at different levels of enrollment. A forecast of rising student expenditures based upon the historical per student costs (or per capita costs) would inevitably over-state real costs by assuming an unrealistic linear function not responsive to economies of scale (demonstrated by this comparison to be quite real). The resulting forecast for Eureka School District expenditures indicated an annually declining cost per student.

An Elko model was not formulated because of insufficient numbers of counties or districts larger in size to provide reasonable measures of cost relationships with larger populations. Only one larger Nevada county of 34,000 population was available to supply a reference point. Further step-wise progression was not appropriate due to the extreme increase in other



county populations (e.g., 208,000 and 515,000) compared to the relatively small increases in Elko County populations which have been forecasted (Section 3.4.2). The same problem affected the potential for regression analysis of the Elko School District.

The regression analyses permitted adjustments to the levels of local government expenditures to reflect economies of scale for populations and student bodies of different sizes. Comparing local government budgets led to changes in forecasted spending levels for Eureka County and Eureka School District specifically. In the following text, resolution of the effects of direct project-related spending by local jurisdictions and of the existence of economies of scale are handled simultaneously, in order to avoid considerable duplication of tables and text.

#### Expenditures Relative to Expected Economies of Scale

Eureka School District: Comparative data published for the elementary-and-secondary public schools (kindergarten through grade 12), for the period 1979 and 1980 supplied detailed expenditures by type and amount for the 17 school districts of Nevada. While dated, its principal value was comparative, permitting analysis of per student costs between student bodies of different size, in the same calendar years, for which money values were the same for each district. A simple adjustment was later made to apply this comparative analysis to the period of analysis (and its costs) for Eureka School District, while retaining the shape of the regression equation which defined existing scale economies.

Essential school expenditures for the 17 districts have been restated on Tables 3-35 through 3-44. The total number of schools and total expenditures per school in each district (Table 3-35) reveal that heavily populated and urbanized districts spend considerably more per school than do less populated and more rural districts. Carson City, Clark and Washoe Districts have above average spending levels per school, while Eureka and Elko are below average. However, on an as expenditures per student basis, as shown on Table 3-36, the least populated districts spend more than the average: Eureka and Esmeralda districts in 1980 spent \$4,464 per 200 and \$4,489 per 112



students compared to the state average of \$1,740. These levels of expenditure reflect spending out of the "General Fund" of school district budgets, which may include receipts from State, County, School District, Federal, and Transfer Accounts, and represents the total of all expenditures, including capital outlays, evening school, transportation, and similar items which may not be equally shared by each school district.

In order to place all districts on an equal level for comparative purposes, expenditures were restated according to direct costs of teaching: instruction, administration, operation, maintenance, etc., as shown on Tables 3-37 and 3-38. Five main categories of expenditure were isolated (each composed of several code numbers and amounts which appear to be normal operating expenditures) to produce a total of direct teaching costs, including transportation of the students. These were restated as expenditures per student enrolled for each of the 17 districts, as shown on Tables 3-39 and 3-40. The excluded miscellaneous outlays were also tabled and total exclusions identified by code number and type; these amounts as expenditures per student are shown on Table 3-41.

Expenditures per student among the 17 districts for five most directly applicable teaching costs were as follows:

<u>1980</u>	<u>Eureka</u>	<u>Elko</u>	<u>Average</u>
	(Dollar costs per student)		
Administration (Instruction)	1,994	1,243	1,131
Transportation	645	101	79
<u>1980</u>	<u>Eureka</u>	<u>Elko</u>	<u>Average</u>
	(Dollar costs per student)		
Operation (Maintenance)	602	184	189
Employees' Retirement Insurance	413	236	205
Equipment for Administration Instruction	<u>53</u>	<u>5</u>	<u>11</u>
Total Direct Teaching Costs	3,707	1,769	1,615
Excluded Outlays	758	138	126



Table 3-35 School District General Fund Expenditures Per School  
(Per Average Number of Schools in Each District)

<u>School District</u>	<u>Number Schools</u> <u>1/</u>		<u>Expenditures Per School</u> <u>2/</u>	
	<u>1979</u>	<u>1980</u>	<u>1979</u> (\$000)	<u>1980</u>
Carson City	2	2	4,852.7	5,101.3
Churchill	2	2	2,187.1	2,505.7
Clark	32	34	4,069.7	4,378.3
Douglas	2	2	2,776.2	3,295.1
Elko	4	4	1,641.3	1,794.9
Esmeralda	*	*	-	-
Eureka	1	1	798.8	892.9
Humboldt	3	3	1,065.0	1,203.4
Lander	2	2	808.3	952.8
Lincoln	3	3	674.7	744.5
Lyon	3	3	1,380.6	1,607.1
Mineral	1	1	2,426.7	2,548.2
Nye	4	4	902.8	986.2
Pershing	1	1	1,201.0	1,324.5
Storey	1	1	442.9	557.9
Washoe	17	17	3,004.1	3,310.4
White Pine	6	3	572.9	1,189.0
Totals	<u>84</u>	<u>83</u>	<u>2,749.3</u>	<u>3,097.4</u>

\*None listed

1/ Elementary, secondary (Jr. High, Jr/Sr. High, and High School).2/ Average: General fund total expenditures/number school.

Source: Research bulletin: Enrollment and certified personnel information, Vol. 25, Number 1, March, 1983, Nevada Department of Education; Biennial Report of Selected Data, by the Superintendent of Public Instruction.



Mt. Hope Molybdenum Project

Table 3-36 Total Expenditures and Per Student Costs of General Fund Budgets  
Only 1/ Year End 1979, 1980

School District	No. Students	---1979---		Per Student	---1980---		Per Student
		2/	Total Expend. \$		2/	Total Expend. \$	
Carson City	6,192		9,705,432	1,567	5,942	10,202,607	1,717
Churchill	2,995		4,374,122	1,460	2,972	5,011,354	1,686
Clark	86,211		130,231,966	1,511	87,425	148,877,362	1,703
Douglas	3,421		5,552,484	1,623	3,557	6,590,131	1,853
Elko	3,614		6,565,376	<u>1,817</u>	3,766	7,179,478	<u>1,906</u>
Esmeralda	114		545,641	4,786	112	502,773	4,489
Eureka	173		798,777	<u>4,617</u>	200	892,899	<u>4,464</u>
Humboldt	1,802		3,195,095	1,773	1,865	3,610,236	1,936
Lander	903		1,616,640	1,782	950	1,905,573	2,006
Lincoln	911		2,024,250	2,222	921	2,233,370	2,425
Lyon	2,478		4,141,758	1,671	2,640	4,821,320	1,826
Mineral	1,352		2,426,695	1,795	1,379	2,548,242	1,848
Nye	1,618		3,611,124	2,232	1,721	3,984,832	2,315
Pershing	700		1,201,037	1,716	707	1,324,536	1,873
Storey	190		442,900	2,331	215	557,914	2,595
Washoe	31,837		51,070,534	1,604	31,700	56,276,094	1,775
White Pine	1,766		3,437,784	1,947	1,662	3,567,069	2,146
TOTALS	<u>146,281</u>		<u>230,941,615</u>	<u>1,579</u>	<u>147,734</u>	<u>257,085,790</u>	<u>1,740</u>

1/ Includes receipts from state, county, school district, federal and transfer accounts.

2/ First month enrollment, unweighted for kindergarten (0-6), of K-12 and special ungraded students: T-4,5 and T-19,20.

Source: Biennial Report of Selected Data, Supplement Number One, Department of Education, July 1, 1978, to June 30, 1980 inclusive, Superintendent of Public Instruction.

Note: Totals may appear inaccurate due to rounding of numbers, but are official.



Mt. Hope Molybdenum Project

Table 3-37 Breakdown of School District Expenditures - I  
Out of General Fund Only  
Annual Totals: 1978-79, 1979-80 (\$000)

School District	Administration, Instruction		Student Transportation		Operation, Maintenance	
	(1979)	(1980)	(1979)	(1980)	(1979)	(1980)
	<u>1/</u>		<u>2/</u>		<u>3/</u>	
Carson City	6,293.2	6,730.5	456.7	406.8	912.0	998.9
Churchill	2,707.5	3,099.6	380.4	466.3	432.8	516.7
Clark	86,342.4	96,651.6	4,923.4	5,927.3	14,129.1	16,088.3
Douglas	3,205.5	3,870.4	387.8	505.6	638.5	845.0
Elko	4,323.9	4,679.4	322.7	380.2	664.4	693.1
Esmeralda	212.9	212.3	89.7	85.6	36.4	49.0
Eureka	346.1	398.8	112.5	129.0	104.1	120.3
Humboldt	2,073.6	2,172.9	164.0	278.1	351.0	407.4
Lander	1,053.0	1,170.8	72.4	166.7	155.4	175.4
Lincoln	1,184.0	1,363.6	113.4	123.1	182.1	196.8
Lyon	2,434.6	2,824.8	424.4	400.6	442.0	521.7
Mineral	1,432.7	1,503.8	161.8	195.8	318.8	361.9
Nye	1,977.0	2,223.4	310.2	450.1	382.1	423.8
Pershing	739.9	802.6	72.6	84.6	136.9	164.4
Storey	275.9	329.4	20.6	21.5	30.3	45.3
Washoe	33,111.7	36,830.5	1,473.2	1,774.6	5,182.3	5,835.5
White Pine	2,213.6	2,194.6	211.8	272.1	304.0	408.5
TOTALS	<u>149,932.5</u>	<u>167,059.0</u>	<u>9,697.6</u>	<u>11,668.0</u>	<u>24,402.2</u>	<u>27,852.0</u>

1/ 100 (all); 200 (all): Code Numbers of Department Accounts.

2/ 400 (all, includes capital outlays)

3/ 500 (all); 620 (partial, excludes 630,690).



Mt. Hope Molybdenum Project

Table 3-38 Breakdown of School District Expenditures - II  
Out of General Fund Only  
Annual Totals: 1978-79, 1979-80 (\$000)

School District	Employees' Retirement Insurance		Equipment for Admin. Instruction		Total Direct Teaching Costs	
	(1979)	(1980)	(1979)	(1980)	(1979)	(1980)
	<u>1/</u>		<u>2/</u>		<u>3/</u>	
Carson City	992.0	1,275.9	145.8	96.8	8,799.7	9,508.9
Churchill	525.6	620.1	20.4	22.9	4,066.7	4,725.6
Clark	14,582.3	16,267.4	965.7	867.9	120,942.9	135,802.5
Douglas	653.2	735.3	75.0	46.2	4,960.0	6,002.5
Elko	847.5	889.8	16.5	17.9	6,175.0	6,660.4
Esmeralda	46.0	53.0	5.8	5.3	390.8	405.2
Eureka	66.9	82.6	9.7	10.6	639.3	741.3
Humboldt	290.6	473.9	8.1	19.5	2,887.3	3,351.8
Lander	135.3	213.9	18.6	20.7	1,434.7	1,747.5
Lincoln	265.4	298.5	27.6	31.1	1,772.5	2,013.1
Lyon	476.6	558.8	8.2	28.9	3,785.8	4,334.8
Mineral	300.5	317.6	4.8	4.6	2,218.6	2,383.7
Nye	398.4	468.5	59.7	53.0	3,127.4	3,618.8
Pershing	153.1	178.3	5.3	2.6	1,107.8	1,232.5
Storey	52.4	61.5	6.8	13.0	386.0	470.7
Washoe	6,961.4	7,385.6	298.7	391.3	41,027.3	52,217.5
White Pine	445.7	462.6	2.2	2.0	3,177.3	3,339.8
TOTALS	<u>27,192.9</u>	<u>30,343.3</u>	<u>1,678.9</u>	<u>1,634.3</u>	<u>206,899.1</u>	<u>238,556.6</u>

1/ 721, 722, 730 (partial, excludes rentals, other, 740, 790)

2/ 951, 952 (partial, excludes 953, 954, 955, 956, 957, 958)

3/ Due to rounding of numbers in official budgets, totals may not appear accurate but do represent the correct sums as taken from state budgets.



Mt. Hope Molybdenum Project

Table 3-39 Breakdown of School District Expenditures - III  
Out of General Fund Only  
Annual Totals: 1978-79, 1979-80 (\$000)

School District	Administration, Instruction		1/	Student Transportation		1/	Operation, Maintenance	
	(1979)	(1980)		(1979)	(1980)		(1979)	(1980)
Carson City	1,016	1,133		73.7	68.5		147.3	168.1
Churchill	904	1,043		127.0	156.9		144.5	173.9
Clark	1,001	1,105		57.1	67.8		163.9	184.0
Douglas	937	1,088		113.4	142.1		186.6	237.5
Elko	1,196	1,243		89.3	100.7		183.8	183.5
Esmeralda	1,867	1,896		786.8	764.3		319.3	437.5
Eureka	2,000	1,994		650.3	645.0		601.7	601.5
Humboldt	1,151	1,165		91.0	149.1		194.8	218.4
Lander	1,161	1,232		79.8	76.2		171.3	184.6
Lincoln	1,300	1,481		124.5	123.1		199.9	213.7
Lyon	982	1,070		171.3	160.7		178.4	197.6
Mineral	1,060	1,091		119.7	117.3		235.8	262.4
Nye	1,203	1,292		191.7	180.2		236.2	246.3
Pershing	1,057	1,135		103.7	102.7		195.6	232.5
Storey	1,452	1,532		108.4	95.8		159.5	210.7
Washoe	1,040	1,162		46.3	46.5		162.8	184.1
White Pine	1,253	1,321		119.9	127.4		172.1	245.8
<u>AVERAGE</u>	<u>1,025</u>	<u>1,142</u>		<u>66.3</u>	<u>79.7</u>		<u>166.9</u>	<u>190.4</u>

1/ Includes all categories of expense given under this title, including capital replacement of vehicles.



Mt. Hope Molybdenum Project

Table 3-40 Breakdown of School District Expenditures - IV  
Out of General Fund Only  
Per Student Enrolled: 1978-79, 1979-80 (\$000)

School District	Employees' Retirement Insurance		Equipment for Admin. Instruction		Total Direct Teaching Costs	
	(1979)	(1980)	(1979)	(1980)	(1979)	(1980)
Carson City	160.2	214.7	23.5	16.3	1,421.1	1,600.3
Churchill	175.5	208.6	6.8	7.7	1,357.8	1,590.0
Clark	169.1	186.1	11.2	9.9	1,402.9	1,553.4
Douglas	190.9	206.7	21.9	13.0	1,450.0	1,687.5
Elko	<u>234.5</u>	<u>236.3</u>	<u>4.6</u>	<u>4.8</u>	<u>1,708.1</u>	<u>1,768.6</u>
Esmeralda	403.5	473.2	50.9	47.3	3,428.1	3,617.9
Eureka	<u>386.7</u>	<u>413.0</u>	<u>56.1</u>	<u>53.0</u>	<u>3,695.4</u>	<u>3,706.5</u>
Humboldt	161.3	254.1	4.5	10.5	1,602.3	1,797.2
Lander	149.2	225.2	20.5	21.8	1,581.8	1,839.5
Lincoln	291.3	324.1	30.3	33.8	1,945.7	2,185.8
Lyon	192.3	211.7	3.3	10.9	1,527.8	1,642.0
Mineral	222.3	230.3	3.5	3.3	1,641.0	1,728.6
Nye	246.2	272.2	36.9	30.8	1,932.9	2,102.7
Pershing	218.7	252.2	7.6	3.7	1,582.6	1,743.3
Storey	275.8	286.0	35.8	60.5	2,031.6	2,189.3
Washoe	218.7	233.0	9.9	12.3	1,288.7	1,647.2
White Pine	252.4	278.3	1.2	1.2	1,799.2	2,009.5
<u>AVERAGE</u>	<u>185.9</u>	<u>207.4</u>	<u>11.5</u>	<u>11.2</u>	<u>1,414.4</u>	<u>1,630.8</u>



Mt. Hope Molybdenum Project

Table 3-41 Breakdown of School District Expenditures - V  
Out of General Fund Only  
Excluded Expenses 1978-79, 1979-80

<u>School District</u>	<u>Excluded Miscellaneous Outlays</u> <u>(\$000) 1/</u>		<u>Per Student Miscellaneous Outlays</u> <u>(\$)</u>	
	(1979)	(1980)	(1979)	(1980)
Carson City	905.7	693.1	146.3	116.6
Churchill	307.4	285.8	102.6	96.2
Clark	9,289.1	13,074.9	107.7	149.6
Douglas	592.5	587.6	173.2	165.2
Elko	390.4	519.1	<u>108.0</u>	<u>137.8</u>
Esmeralda	154.8	97.6	1,357.9	871.4
Eureka	159.5	151.6	<u>922.0</u>	<u>758.0</u>
Humboldt	307.8	258.4	170.8	138.5
Lander	181.9	158.1	200.5	166.4
Lincoln	251.7	220.3	276.3	239.2
Lyon	356.0	486.5	143.7	184.3
Mineral	208.1	164.5	153.9	119.3
Nye	483.7	366.0	299.0	212.7
Pershing	93.2	92.0	133.1	130.1
Storey	56.9	87.2	299.5	405.6
Washoe	10,043.2	4,058.6	315.5	128.0
White Pine	260.5	227.3	147.5	136.8
<u>TOTALS</u>	<u>18,064.3</u>	<u>18,553.2</u>	<u>123.5</u>	<u>125.6</u>

1/ Not directly related to teaching or school administration; or, irregular, as not all districts indicate expenses for these items.

Excluded Codes: 311, 312, 319 miscellaneous and auxiliary services; 321, 322, 329 health services; 331, 332, 333, 335, 339 food service; 341, 342, 343, 344 student body activities; 351, 359 summer school; 361, 362, 363, 369 evening school and adult education; 371, 372, 379 recreation and community service; 630, 690 maintenance (equip., replacement, other); 740, 790, rental bldgs, other fixed; 830, 840 outgoing transfers; 851, 859 interfund transfers; 930, 941, 942 capital outlays; 953, 954, 955, 956, 957, 958 equipment (auxiliary food, vehicles, shop, etc.).



Mt. Hope Molybdenum Project

Table 3-42 School District General Fund Expenditures in Percent as Direct and Indirect Teaching Costs

ELKO AND EUREKA  
(1978-79, 1979-80)

	Per Student Costs:			
	Elko		Eureka	
	1979	1980	1979	1980
Total \$/Student	\$1,817	\$1,906	\$4,617	\$4,464
Total Expenditure	100 percent	100 percent	100 percent	100 percent
Administration, Instruction	65.8	65.2	43.3	44.7
Transportation	4.9	5.3	14.1 <u>1/</u>	14.4 <u>1/</u>
Operation, Maintenance	10.1	9.6	13.0 <u>1/</u>	13.5 <u>1/</u>
Employees' Retirement, Insurance	12.9	12.4	8.4	9.3
Equipment	0.25	.25	1.2	1.2
<u>Total Direct Teaching Costs</u>	\$94.0	\$92.8	\$80.0	\$83.0
Excluded Miscellaneous Outlays	6.0	7.2	20.0	17.0
(Number Students)	(3,614)	(3,766)	(173)	(200)

1/ Above 17-district average by significant amount.



Mt. Hope Molybdenum Project

Table 3-43 School District General Fund Expenditures in Percent as Direct and Indirect Teaching Costs (1978-79, 1979-80)

	<u>Per Student Costs:</u>					
	17-District Average		Storey		Pershing	
	1979	1980	1979	1980	1979	1980
Total \$/Student	\$1,579	\$1,740	\$2,331	\$2,595	\$1,716	\$1,873
Total Expenditure	100 percent	100 percent	100 percent	100 percent	100 percent	100 percent
Administration, Instruction	64.9	65.0	62.3	59.0	61.1	60.6
Transportation	4.2	4.5	4.7	3.7	6.0	5.5
Operation, Maintenance	10.6	10.8	6.8	8.1	11.4	12.4
Employees' Retirement, Insurance	11.8	11.8	11.8	11.0	12.7	13.5
Equipment	0.7	0.6	1.5	2.3	0.4	0.2
Total Direct <u>Teaching Costs</u>	\$92.2	\$92.8	\$87.2	\$84.4	\$92.2	\$93.1
Excluded Miscellaneous Outlays	7.8	7.2	12.8	15.6	7.8	6.9
(Number Students)	(146,281)	(147,734)	(190)	(215)	(700)	(707)



Mt. Hope Molybdenum Project

Table 3-44 School District General Fund Expenditures in Percent as Direct and Indirect Teaching Costs (1978-79, 1979-80)

	<u>Per Student Costs:</u>					
	<u>Mineral</u>		<u>Lyon</u>		<u>Douglas</u>	
	<u>1979</u>	<u>1980</u>	<u>1979</u>	<u>1980</u>	<u>1979</u>	<u>1980</u>
Total \$/Student	\$1,795	\$1,848	\$1,671	\$1,826	\$1,623	\$1,853
Total Expenditure	100	100	100	100	100	100
	percent	percent	percent	percent	percent	percent
Administration, Instruction	59.1	59.0	58.8	58.6	57.7	58.7
Transportation	6.7	6.3	10.2	8.8	7.0	7.7
Operation, Maintenance	13.1	14.2	10.7	10.8	11.5	12.8
Employees' Retirement, Insurance	12.4	12.5	11.5	11.6	11.8	11.2
Equipment	0.2	0.2	0.2	0.6	1.3	0.7
 Total Direct Teaching Costs	 \$91.4	 \$93.5	 \$91.4	 \$89.9	 \$89.3	 \$91.1
 Excluded Miscellaneous Outlays	 8.6	 6.5	 8.6	 10.1	 10.7	 8.9
(Number Students)	(1,352)	(1,379)	(2,478)	(2,640)	(3,421)	(3,557)



It may be seen from these comparisons that Elko costs for its 3,766 students in 1980 more closely approximated the average of 17 districts than did the costs for Eureka's 200 students. The consistently high level of costs in Eureka in all categories reflects low school enrollment (the higher teacher-student ratio accounts for the lack of decline in administration, instruction and related retirement and insurance costs). The transportation item has retained outlays for vehicle replacements in all 17 districts, as this was a repeated item in both 1979 and 1980 for as many as 75 percent of the districts. Such uniformity of outlay was a guide in selecting normal recurrent expenditure items for inclusion.

Restating these per student costs as percentages of total costs permits a more critical view of relative differences between seven districts which encompass the range of student enrollment between Eureka's 200 students and Elko's 3,766 students. On Tables 3-42, 3-43 and 3-44, Elko and Eureka are compared with one another, the 17-district average and five other districts of intermediate size. The data show that Eureka costs, as a percentage of its total outlays, are below average for administration, instruction and employees' retirement and insurance (not withstanding higher than average per student outlays in dollars). Eureka is above average in transportation costs and operation and maintenance costs as a percentage of total costs. These costs are both high as dollar costs and high as relative costs.

Average total direct teaching costs for the 17 school districts amount to 92.5 percent of General Fund expenditures. Elko's costs are marginally higher. Eureka's costs average only 81.5 percent with the highest level of excluded miscellaneous outlays (18.5 percent of General Fund expenditures) among the eight comparisons shown on Tables 3-42, 3-43, and 3-44. This is not because Eureka spends absolutely more than comparable school districts for miscellaneous items and services but because it spends relatively more for these on a per student cost basis. In actual dollar amounts, Table 3-41 shows that Eureka per student costs for miscellaneous items ranked second highest, after Esmeralda (the district with lowest student enrollment), but in total dollars spent on these items ranked very low (fourth lowest) with \$151,000 spent in 1980. Both Esmeralda and Eureka greatly exceeded average dollar costs per pupil of



\$125.6 in 1980; Esmeralda by 6.9 times and Eureka by 6 times, for excluded miscellaneous items. This occurred because such costs are represented by interfund transfers and support funds from sources outside regular local revenues, and for purposes not normally financed by local revenues, which in the case of lower school enrollment districts assume a disproportionate relative share of total General Fund revenues when stated as costs per student.

As noted, the linear regression analysis was prepared for Eureka School District to determine the levels at which costs per student might decline with higher enrollments. Using total expenditures and total direct teaching costs (net of excluded miscellaneous outlays) for six of the districts having the lowest enrollments, Table 3-45 supplied data on the numbers of students (input X) relative to amounts of expenditure per student (input Y) for both of the years 1979 and 1980. This X-Y relationship was of the order: 1979 X and 1979 Y, followed by 1980 X and 1980 Y for each of the six districts, so that 12 pairs of data made up the base for the regression analysis.

Additional columns of input data were prepared for more detailed examination. These were: administration and instruction, operation and maintenance, retirement and insurance, and the subtotal of these which excluded transportation and school equipment. In this way, most arrangements of expenditures per pupil were available for inspection; the subtotal above excluded two items which were included in the total direct teaching costs. If transport vehicles and school equipment were to be made available outside the normal Eureka school budgets, the separation of these items from normal expenditures would furnish a basis for calculating the level of savings which might arise.

The resulting system of equations produces an objective statement of the mathematical frequency and reliability of a data array to predict intermediate points within the data range. For example, from Table 3-45 the range of X-Y is from 114 to 950 students and \$4,786 to \$1,716 per student. The "model" of these cost relationships may then be utilized to produce the equivalent costs per student for a range of students from 250 through 475, in increments of 25. This is within the capability of the model, which also



Mt. Hope Molybdenum Project

Table 3-45 Data for Regression Analysis: Per Student Costs  
Variation with Number of Students

Column Number	1		2		3		4	
School District	Number Students (X)		Total Expenditures (Y)		Total Direct Teaching Costs (Y)			
	(1979)	(1980)	(1979)	(1980)	(1979)	(1980)		
Esmeralda	114	112	4,786	4,489	3,428	3,618		
Eureka	173	200	4,617	4,464	3,695	3,706		
Storey	190	215	2,331	2,595	2,032	2,189		
Pershing	700	707	1,716	1,873	1,583	1,743		
Lander	907	950	1,782	2,006	1,582	1,839	1/	
Lincoln	911	921	2,222	2,425	1,946	2,186	1/	
Mineral	1,352	1,379	1,795	1,848	1,641	1,729		
Nye	1,618	1,721	2,232	2,315	1,933	2,103		
White Pine	1,766	1,662	1,847	2,146	1,799	2,009		
Humboldt	1,802	1,865	1,773	1,936	1,602	1,797		
Lyon	2,478	2,640	1,671	1,826	1,528	1,642		
Churchill	2,995	2,972	1,460	1,686	1,403	1,553		
Douglas	3,421	3,557	1,623	1,853	1,450	1,688		
Elko	3,614	3,766	1,817	1,906	1,708	1,769		
Carson City	6,192	5,942	1,567	1,717	1,421	1,600		
Washoe	31,837	31,700	2/					
Clark	86,211	87,425						

1/ Break-line separating Eureka School District and comparable lower enrollment districts for analysis apart from higher enrollment districts.

2/ Washoe and Clark Districts excluded from analysis (unusual size enrollment outside reference range).

3/ Subtotal omits Transportation and School Equipment.



Mt. Hope Molybdenum Project

Table 3-45 Data for Regression Analysis: Per Student Costs  
(cont'd) Variation with Number of Students

Column Number	5	6	7	8	9	10	11		
School District	Administration Instruction		Operation, Maintenance		Retirement, Insurance		Subtotal Cols. 5-10		3/
	(1979)	(1980)	(1979)	(1980)	(1979)	(1980)	(1979)	(1980)	
Esmeralda	1,867	1,896	319	438	404	473	2,590	2,807	
Eureka	2,000	1,994	602	602	387	413	2,989	3,009	
Storey	1,452	1,532	160	211	276	286	1,888	2,029	
Pershing	1,057	1,135	196	233	219	252	1,472	1,620	
Lander	1,161	1,232	171	185	149	225	1,481	1,642	
Lincoln	1,300	1,481	200	214	291	324	1,791	2,019	
Mineral	1,060	1,091	236	262	222	230			
Nye	1,203	1,292	236	246	246	272			
White Pine	1,253	1,321	172	246	252	278			
Humboldt	1,151	1,165	195	218	161	254			
Lyon	982	1,070	178	198	192	212			
Churchill	904	1,043	145	174	176	209			
Douglas	937	1,088	187	237	191	207			
Elko	1,196	1,243	184	184	235	236			
Carson City	1,016	1,133	147	168	160	215			



describes the correlation coefficient (degree of reliability) and standard error of regression (range above or below the predicted value by which the value might vary).

Predicted dollar expenditures per student were determined as shown on Table 3-46. The model is shown to predict costs about 20 percent below actual costs for 173 students (the number in Eureka in 1979) and about 18.5 to 22.6 percent below actual for 200 students (Eureka's enrollment in 1980). This check against actual costs confirms the statement by the correlation coefficient of an average 0.78 reading, indicating less than accurate predictions (a reading close to 1.00 offers the most reliable values). This degree of error is believed to result from the inclusion of the Lincoln District in the array: while its student body is about the same as Lander (no. 5 in the array), its costs per student turn sharply upward above Lander's. Because of this, another analysis was made, excluding Lincoln District, and using the remaining five low-enrollment districts.

For the five district analysis, the 10-pair array produced a higher correlation coefficient of 0.79 versus 0.78 for total expenditures and 0.78 versus 0.76 for total direct teaching costs. The predicted expenditures are shown on Table 3-47, against the hypothetical levels of increase in the student body. The cost levels predicted for administration, instruction and retirement and insurance were of a higher order of accuracy; at 0.85 and 0.84. Operation and maintenance costs were unreliably low at 0.58. The multiples needed to bring predicted values to the level of actual values are shown at the bottom of Table 3-47. These derive from comparing a known actual value with the model's prediction of the same value (enrollment of 173 in Eureka in 1979).

In order to bring all predicted values up to the same relative value as the known value, the multiple was applied to all the predicted costs in their respective columns. The calculations on Table 3-48 demonstrate the new, higher levels of costs per student when all the costs associated with a student enrollment of 173 students (an actual cost) are duplicated by the multiplier. For the hypothetical array of higher levels of enrollment, the declining levels of expenditure per student can then be shown at appropriate levels.



Mt. Hope Molybdenum Project

Table 3-46 Regression Model Predictions of Student Cost Variation With Change in Number of Students (1978-79, 1979-80 Base Year)

A. Function of Six Lower-Enrollment School Districts (\$): 1/

<u>No. Students (X)</u>	<u>Per Student</u> <u>Total Expenditures (Y)</u>			<u>Per Student</u> <u>Total Direct Teaching (Y)</u>	
	1979-80 <u>2/</u> Combined	1979	1980	1979-80 <u>2/</u> Combined	As Percent <u>3/</u> Col. 1
	(1)	(2)	(3)	(4)	(5)
250	3,628	3,623	3,632	2,933	80.8
275	3,561	3,552	3,570	2,887	81.1
300	3,495	3,480	3,509	2,842	81.3
325	3,429	3,408	3,448	2,796	81.5
350	3,362	3,337	3,386	2,751	81.8
375	3,296	3,265	3,325	2,705	82.1
400	3,230	3,193	3,264	2,660	82.4
425	3,163	3,132	3,202	2,614	82.6
450	3,097	3,050	3,141	2,568	82.9
475	3,031	2,978	3,080	2,523	83.2

Actual Eureka Enrollment and Predicted Costs: 4/

<u>173</u> (79)	3,832	3,844	3,820	3,073	80.2
<u>200</u> (80)	3,760	3,767	3,754	3,023	80.4

1/ Esmeralda, Eureka, Storey, Pershing, Lander, Lincoln.

2/ 12 pairs in analysis (X, Y of 1979; plus X, Y 1980 as pairs).

3/ Percent shows this cost declines less rapidly than total expenditures.

4/ Reported Eureka costs follow:

<u>173</u>	-	4,617	-	3,695	80.0
<u>200</u>	-	-	4,464	3,706	83.0

Inaccuracy level of regression prediction (percent):

<u>173</u>	-20.5	-20.1	-20.9	-20.2	-
<u>200</u>	-18.7	-18.5	-18.9	-22.6	-



Mt. Hope Molybdenum Project

Table 3-46 Regression Model Predictions of Student Cost Variation With Change  
(cont'd) in Number of Students (1978-79, 1979-80 Base Year)

A. Estimates:

No. of Students	(1 & 2)	Percent A	(1)	Percent A	(2)	Percent A	(3 & 4)	Percent A
250	\$3,627.74	3.55	3,623.45		3,631.57		2,932.86	2.98
275	3,561.39	1.85	3,551.80		3,570.24		2,887.32	1.57
300	3,495.05	1.85	3,480.11		3,508.91		2,841.77	1.56
325	3,428.70	1.89	3,408.42		3,447.58		2,796.23	1.62
350	3,362.35	1.95	3,336.74		3,386.25		2,750.69	1.64
375	3,296.01	1.96	3,265.05		3,324.92		2,705.14	1.67
400	3,229.66	2.03	3,193.36		3,263.59		2,659.60	1.66
425	3,163.32	2.04	3,121.67		3,202.26		2,614.06	1.73
450	3,096.97	2.08	3,049.99		3,140.93		2,568.52	1.76
475	3,030.63	2.13	2,978.30		3,079.60		2,522.97	1.75

Predicted Costs Using Actual Enrollment as Basis:

<u>173</u>	\$3,832.08	-0-	3,844.29		3,820.47		3,073.13	-0-
<u>200</u>	3,760.43	1.88	3,766.86		3,754.24		3,023.94	1.63

LOWER ENROLLMENT DISTRICTS

	Esmeralda - Lincoln (1 & 2) Combined	(1)	(2)	Esmeralda - Lincoln (3 & 4) Combined
Y-intercept	4,291.19	4,340.36	4,244.88	3,388.28
Y-slope	-2.65	-2.87	-2.45	-1.82
Correl. Coeff.	-0.78	-0.78	-0.79	-0.76
Index of Determ.	0.61	0.60	0.63	0.56
	0.39	0.40	0.37	0.42
	1,192.43	1,287.10	1,088.55	350.04
	5,626.25	513.47	1,192.44	4,200.46
	10.00	3,080.84	442.93	10.00
	562.62	4.00	4.00	20.50
St. Error Regr.	23.72	27.75	25.76	20.50
	122,510.06	121,098.47	1,184,930.2	699,275.69
	1,212.49	852.40	2,666.36	2,896.78
St. Error Slope	0.02	0.03	1.00	0.01

Range: Predicted Value  $\pm$  2x 23.72 =  
27.75 =  
25.76 =

Equation: -2.65 students + \$4,291.19



Mt. Hope Molybdenum Project

Table 3-47 Regression Model Predictions of Student Cost Variation With Change in Number of Students (1978-79, 1979-80 Base Year)

B. Function of Five Lower-Enrollment School Districts (\$): 1/

Per Student Expenditures x Cost Category  
(1979-80 Combined) 2/

<u>No. of Students</u>	<u>Total Expend.</u>	<u>Total Direct</u>	<u>Admin. Instruct.</u>	<u>Oper., Maint.</u>	<u>Retire., Insurance</u>	<u>Sub 3/ Total</u>
173 4/	3,847	3,084	1,770	386	373	2,528
200	3,764	3,027	1,744	378	366	2,488
250	3,610	2,920	1,698	363	354	2,414
300	3,456	2,813	1,651	349	341	2,340
325	3,379	2,759	1,628	341	334	2,303
350	3,302	2,706	1,604	334	328	2,266
375	3,225	2,652	1,581	327	322	2,229
400	3,148	2,599	1,558	320	315	2,192
425	3,071	2,545	1,534	312	309	2,155
450	2,994	2,492	1,511	305	302	2,118
475	2,918	2,438	1,488	298	296	2,081

1/ Esmeralda, Eureka, Storey, Pershing, Lander.

2/ 10 pairs in analysis (X, Y of 1979; plus X, Y 1980 as pairs).

3/ Preceding 3 columns only, which omits transportation and school equipment.

4/ Actual Eureka per student expenditures with 173 students:

173	4,617	3,695	2,000	602	387	2,989
-----	-------	-------	-------	-----	-----	-------

Multiple Needed to Bring Predicted to Actual:

173	1.2002	1.1981	1.1299	1.5596	1.0375	1.1824
-----	--------	--------	--------	--------	--------	--------



Mt. Hope Molybdenum Project

Table 3-47 Regression Model Predictions of Student Cost Variation With Change  
(cont'd) in Number of Students (1978-79, 1979-80 Base Year)

	<u>Total</u>	<u>Direct</u>	<u>Admin.</u>	<u>Oper.</u>	<u>Retire.</u>	<u>Sub.</u>
Y-intercept	\$4,379.58	3,454.55	1,931.07	435.94	417.32	2,784.34
Y-slope	-3.08	-2.14	-0.93	-0.29	-0.26	-1.48
Correl.	-0.79	-0.78	-0.85	-0.58	-0.84	-0.81
Index	0.63	0.61	0.72	0.33	0.71	0.65
	0.37	0.39	0.28	0.67	0.29	0.35
	470.55	345.02	100.26	110.34	28.90	208.45
	4,705.95	3,450.18	1,002.60	1,103.45	288.98	2,084.86
	8.0	8.0	8.00	8.00	8.00	8.00
St. Error Regr.	24.25	20.77	11.19	11.74	6.01	16.14
	1,612,340.5	798,567.95	107,120.96	27,313.65	9,844.09	359,643.21
	4,015.40	2,825.88	1,034.99	522.62	313.75	1,896.44
St. Error Slope	0.01	0.01	0.01	0.02	0.02	0.01
$(\pm 2 \times 24.25) + \text{Predicted Value}$						
	<u>48.5</u>	<u>41.5</u>	<u>22.4</u>	<u>23.5</u>	<u>12.0</u>	<u>32.3</u>



Before applying the regression equations to the levels of student enrollment in Eureka which have been forecasted, further information regarding adjustments made to the Eureka School District budget of 1982-83 was input (Table 3-49). The 1982-1983 budget was the basis for calculations in the final fiscal impact analysis.

All revenue items have been shown as reported. Only two types of revenue out of the nine shown on Table 3-49 have been included in the fiscal impact analysis: ad valorem and local school support (deriving from the 1.5 percent component of the state sales tax retained by the districts). The forecast does not use these tax amounts directly in the impact analysis; rather, for both types of taxes the amounts paid in reflect the economic activities of the mine/process plant operations and of mine/process plant employees and generated employment within the taxing jurisdiction, and do not derive from per capita extrapolations of taxes paid by present populations.

Expenditure forecasts of the impact analysis were, however, originally based on per capita expenditures of the present population, projected without change through the period 1974-2037. Total school expenditures in the linear analysis were at the level of \$1,279,650, after elimination of nonrecurring items. This amounted to \$1,080.78 per capita and \$5,687.33 per student for Eureka School District. Table 3-49 shows the reduction in the expenditure base (\$4,428) for Eureka, which results from the comparative analysis of expenditures by type in 17 school districts.

The items selected for inclusion within the category of total direct teaching costs (which averaged 81.5 percent in the period 1979-80) were as follows:

Admin., Instruction	
Regular	\$348,073
Special	37,640
Vocational	42,640
Undistributed	220,271
Operation and Maintenance	213,400
Transportation	134,300



Mt. Hope Molybdenum Project

Table 3-48 Possible Application of School District Regression Analysis of Declining Expenditures Per Student (1978-79, 1979-80 Base Year)

1. Recognized Level of Error:

(Adjustment Needed to Bring Predicted to Actual Expenditures/Student) 1/

Eureka School District

<u>No. of Students</u>	<u>Total Expend.</u>	<u>Total Direct</u>	<u>Admin. Instruct.</u>	<u>Oper., Maint.</u>	<u>Retire., Insurance</u>	<u>Sub <sup>2/</sup> Total</u>
173	1.2002	1.1981	1.1299	1.5596	1.0375	1.1824

2. Adjusted Prediction of Expenditures/Student Using Multiples Above:

173	4,617	3,695	2,000	602	387	2,989 <sup>3/</sup>
200	4,517	3,627	1,971	589	380	2,942
250	4,333	3,498	1,919	566	367	2,854
300	4,148	3,370	1,865	544	354	2,767
325	4,055	3,305	1,839	532	347	2,723
350	3,963	3,242	1,812	521	340	2,679
375	3,871	3,177	1,786	510	334	2,636
400	3,778	3,114	1,760	499	327	2,592
425	3,686	3,049	1,733	487	321	2,548
450	3,593	2,986	1,707	476	313	2,504
475	3,502	2,921	1,681	465	307	2,461

3. As Percent of Total Expenditures Per Enrollee:

100	81.5	44.0	13.25	8.85	66.1
-----	------	------	-------	------	------

NOTE: "Range" of Adjusted Predictions (variation from single point given above) is shown below:

( <sup>+</sup> )	48.5	41.5	22.4	23.5	12.0	32.3
------------------	------	------	------	------	------	------

1/ Multiple derived by dividing actual value by predicted value for base case (173 students) at \$/student. Constant multiplier used throughout column.

2/ Preceding 3 columns only, which omits transportation and school equipment.

3/ Prediction now equals actual for 173 students. For 200, prediction shows less than actual in Eureka.



Mt. Hope Molybdenum Project

Table 3-49 Eureka School District Budget of 1982-83 and Adjustments to Entries

<u>General Fund Revenues</u>		<u>General Fund Expenditures</u>	
Local	<u>\$507,100</u>	Admin., Instruct.	<u>\$492,293</u>
Ad Valorem	343,400	Regular	348,073
School Support	107,000	Special	37,640
Franchise	2,500 <u>1/</u>	Vocational	42,640
Motor Vehicle	37,500 <u>1/</u>	Co-Curric.	6,000 <u>1/</u>
Tuition	7,200 <u>1/</u>	Athletics	27,940 <u>1/</u>
Other	9,500 <u>1/</u>	(Student Transp.)	4,500
		Food Services	30,000 <u>1/</u>
State	<u>\$530,841</u> <u>1/</u>	Undistributed	<u>\$563,471</u>
Distrib. School		Administration	220,271
Fund	525,841 <u>1/</u>	Oper., Maint.	213,400
Vocational Aid	5,000 <u>1/</u>	Stud. Transportation	129,800
Federal	<u>\$ 5,500</u> <u>1/</u>	<u>Total</u>	<u>\$1,055,764</u>
Forest Reserve	5,500 <u>1/</u>		
Opening Balance	<u>\$ 66,414</u> <u>1/</u>	Other Fund Transf.	<u>\$ 20,000</u> <u>1/</u>
<u>Total</u>	<u>\$1,109,855</u>	Contingency	20,000 <u>1/</u>
		Unappr. Balance	14,091 <u>1/</u>
		Ending Total	1,109,855 <u>1/</u>
<u>Other Funds</u>	<u>183,886</u> <u>1/</u>	Debt Service	311,207 <u>1/</u>
		Other Funds	133,886 <u>1/</u>
		All Funds	<u>1,554,948</u> <u>2/</u>

After Exclusions:

Net Revenue Base	<u>1982-83</u>
Ad Valorem	\$343,400
1.5% School Support	107,000
Total	\$450,400

After Exclusions:

	<u>\$1982-3</u>	<u>1982-3(%)</u>	<u>1979-80(%)</u>
Admin.	648,624	58.45	54.00
Oper.	213,400	19.23	13.50
Transp.	134,300	12.10	14.40

1/ Excluded from forecast as an item not directly responsive to a rise in taxpaying population (revenues) or school enrollment (expenditures).

Total			
Direct	<u>996,324</u>	<u>89.77</u>	<u>83.00</u>
Excluded	113,531	10.23	17.00
Total	1,109,855	100.00	100.00

2/ Sum of Ending Total, Debt Service and Other Funds only.

1. (Student Enrollment 209 Unweighted)  
Direct Cost Per Student: \$4,767

2. (Students in Prior Study - 225)  
Direct Adjusted Cost Per Student: \$4,428  
Direct Unadjusted Cost Per Student: \$5,687



Total:	996,324	(90 percent)
Excluded		
Miscellaneous	113,531	(10 percent)

For the 209 students now shown as enrolled in Eureka District, the total direct teaching costs are \$4,428 per student for the 1982-83 school year. Table 3-50 shows the basis for the revenue forecast and the expenditure forecast. Expenditures per student are adjusted, as before, for its understatement of actual known costs (of \$4,767 per 209 students). To obtain this multiple, an interpolation between 200 and 250 students yields the prediction given by the model of costs for 209 students of \$3,008 (these costs are 1979-80 costs as well and the multiple of 1.58477 times \$3,008 incorporates an adjustment for inflation).

Predicted economies of scale with a rising level of students is shown on Table 3-51: the unadjusted forecast (using the equivalent of 1979-80 costs and the understatement inherent in the model), produces the cost forecast under Section I. The adjusted forecast under Section II brings costs to their current level and shows the relative levels to which future costs may decline per student as the student body increases. Over the period 1984 - 2000, normal school expenditures (without the additional students resultant of the proposed action) are expected to decline as per student expenditures from \$4,702 to \$4,092. In the case of higher local school enrollments under the proposed action, the per student costs would further decline, with normal enrollment included in total costs, from \$4,437 to \$3,119. The Dispersed Personnel Case 5-B (shown for comparison, see Section 3.5.4) would produce only marginal differences in total direct teaching costs per student from that of the Case 5-A: \$4,478 in 1984 to \$3,402 in year 2000. (The forecast of these per student costs in terms of annual total expenditures is shown on Tables 3-58 and 3-59, in company with the Eureka County forecast discussed later in the text. In summary, by Year 3 it would be anticipated that revenues would exceed expenditures and remain in surplus for the forecast period).

Eureka County: Expenditures of Eureka County were compared with those of four other counties graduated in size of population from Eureka's 1,395 to Elko's 19,875. Budgets of these counties are shown on Table 3-52. It may be seen



Table 3-50 Application of Adjustments to Forecast of Eureka School District Revenues and Expenditures

RevenuesForecast Basis: 1/1. Sales Taxes 3.75% out of 5.75% (omitting 2% State General Fund)

Paid by Mine/Mill on Expenditures

Paid by Non-local new employees on selected expenditures

Distribution to Local Jurisdictions:	3.75	=	65.0%
School Support	26.090	2/	
CCRT (County, City)	8.695		
Supplement CCRT	30.435		

2. Ad Valorem Property Taxes

Paid by Mine/Mill on Property

Paid by Mine/Mill on Net Proceeds

Paid by Non-local New Employees on residences

Distribution to Local Juriscitsion:		100%
School Support	66.66	
County	32.37	
Towns	0.137	
Special Districts	0.835	

Expenditures

Forecast Basis:

1. Total direct teaching costs (\$996,325 in base period), or 89.77% of total \$1,109,855 before debt service and other funds.

2. Direct cost per student  $996,325/209 = \$4,767$ , reduced by:

3. Economies of scale, after fitting regression to base cost:

Model Interpolation:	Actual Base:	<u>Multiple</u>
#200 = \$3,027	#209 = \$4,767	
#250 = \$2,920	(9 = 18% of 50) = \$3,008	1.58477X
Diff: (50) = (107)	(.18 x 107 = \$19)	

4. Multiple is applied to linear regression column as a constant.

a) Normal student population x per student costs

b) Normal plus project student population x per student costs

1/ Not forecasted on per capita basis, but derived directly as shown from specified forecast items (as in original study).2/ Local school support (1.5%) retained by school district. All school support revenues omit the return to school district of "Distributive School Fund" out of the 2% state sales tax component of the State General Fund, or any return out the State General Fund.



Mt. Hope Molybdenum Project

Table 3-51 Cost Forecasts of School District Impacts - Adjusted, Unadjusted

I. UNADJUSTED MODEL OF STUDENT COST ECONOMIES OF SCALE USING FORECASTED NUMBERS OF STUDENTS

Forecasted Enrollment: Eureka						Cost Forecast (\$) 4/		
Year	Normal 1/	Proposed Action 2/		Total (With) 3/		Normal (Alone)	Case	Case
		Case 5-A	Case 5-B	5-A	5-B		5-A (Total	5-B With)
1984	228	78	66	306	294	2,967	2,800	2,826
5	275	321	256	596	531	2,866	2,179	2,319
6	287	289	206	576	483	2,841	2,222	2,400
7	299	287	203	586	502	2,815	2,201	2,381
8	311	287	203	598	514	2,789	2,175	2,355
9	323	287	203	610	526	2,764	2,150	2,329
1990	335			622	538	2,738	2,124	2,304
1	342			629	545	2,723	2,109	2,289
2	349			636	552	2,708	2,094	2,274
3	356			643	559	2,693	2,079	2,259
4	363			650	566	2,678	2,064	2,244
1995	370	287	203	657	573	2,663	2,049	2,229
6	377			664	580	2,648	2,034	2,214
7	385			672	588	2,631	2,017	2,197
8	392			769	595	2,616	2,002	2,182
9	400			687	603	2,599	1,985	2,164
2000	408	287	203	695	611	2,582	1,968	2,147

II. ADJUSTED MODEL FORECAST WITH MULTIPLE (x 1.58477) TO 1982/82 BASIS (\$):

<u>Normal Enrollment</u>				<u>Combined with Proposed Action</u>					
				<u>5-A</u>	<u>5-B</u>			<u>5-A</u>	<u>5-B</u>
1984	4,702	3	4,268	1984	4,437	4,478	3	3,295	3,580
5	4,542	4	4,244	5	3,453	3,675	4	3,270	3,556
6	4,502	1995	4,220	6	3,521	3,803	1995	3,257	3,532
7	4,461	6	4,196	7	3,488	3,773	6	3,223	3,509
8	4,420	7	4,169	8	3,447	3,732	7	3,196	3,482
9	4,380	8	4,146	9	3,407	3,691	8	3,173	3,458
1990	4,339	9	4,119	1990	3,366	3,651	9	3,146	3,429
1	4,315	2000	4,092	1	3,342	3,627	2000	3,119	3,402
2	4,292			2	3,318	3,604			

1/ 0.19 per capita county population (same as base study).

2/ Net annual project student volumes (year-end during quarterly forecast period 1984-1987).

3/ Combined normal plus proposed action Case 5-A, or dispersed personnel Case 5-B.

4/ Based on 1979/1980 fiscal year cost model; to be adjusted x 1.58477.



that total revenues and total expenditures rise according to size of population. When expressed as expenditures per capita, as on Table 3-53, the levels of comparative cost show a tendency to rapidly decline, as population rises. The data base for regression analysis is shown on Table 3-53 as well as the initial output from the regression model.

Six principal items within the budgets of these counties, common to each, were included in individual regression systems:

General Government	Streets, Highways
Public Safety	Health, Welfare
Judicial	Total of above

Excluded from the above regression were two items which ordinarily would be included, but which, because of zero expenditures reported in only one or two cases, rendered all reported sums unusable. These items were Culture and Recreation and Public Works. Table 3-52 shows no expenditures reported in one case for the first, and no expenditures reported in two cases for the second.

The expenditures items listed for inclusion in the regression analysis included all fund sources. This means that locally derived revenues originating in ad valorem and sales taxes have not been the only source of funds, and that expenditures have been funded by interfund transfers, special funds, and authorizations that are not clearly detailed. It further means that a strong likelihood exists that expenditures shown for each item are heavily weighted with non-recurring items, one-of-a-kind entries not shared by the other counties, and irregular expenditures not a part of normal operating costs. While this was undesirable in terms of conducting the regression analysis, to some extent the heavier than normal costs represented offset the necessary elimination of the two line items which were excluded from the total.

The regression analysis produced the test results shown in Section II of Table 3-53: assuming Eureka County's population to rise from 1,395 to 2,000, 3,000, then 4,000, column one shows costs per capita to decline for



Mt. Hope Molybdenum Project

Table 3-52 County Auditor's Reports All Fund Sources, Year Ending 6-30-82

	<u>Eureka</u>	<u>Mineral</u>	<u>Humboldt</u>	<u>Lyon</u>	<u>Elko</u>
<u>Population</u> (6-01-1982)	<u>1,395</u>	<u>6,286</u>	<u>11,816</u>	<u>15,235</u>	<u>19,875</u>
<u>Revenues</u>					
Taxes	204,125	549,916	2,069,535	3,098,690	713,746
<u>Intergovernmental</u>	<u>1,444,606</u>	<u>1,967,247</u>	<u>879,976</u>	<u>1,951,887</u>	<u>3,338,763</u>
Licenses, Permits	4,339	121,982	214,365	301,080	364,768
Fines, Fees	63,006	232,889	332,460	266,924	615,149
Surcharges	25,732	68,550	<u>1/</u>	0	0
Misc.	<u>164,651</u>	<u>95,017</u>	<u>425,600</u>	<u>431,775</u>	<u>1,190,341</u>
TOTAL	<u>1,906,459</u>	<u>3,245,763</u>	<u>3,921,936</u>	<u>6,050,356</u>	<u>6,222,767</u>
<u>Expenditures</u>					
General Govt.	551,521	1,057,982	1,064,398	1,765,658	1,155,607
Public Safety	228,115	611,666	804,151	1,020,405	925,775
Judicial	92,293	163,069	345,657	298,389	264,852
Streets, Hiways	476,862	400,219	623,225	929,375	727,143
Health, Welfare	669,211	286,228	58,348	61,022	253,689
Culture, Recreat.	62,005	163,896	0	85,876	539,771 <u>2/</u>
Public Works	0	297,168	137,699	452,577	0
Water, Util.	22,914	0	0	<u>3/</u>	<u>4/</u>
Transportation	0	0	110,480		<u>5/</u>
Agric. Ext.	0	0	22,647	0	39,324
Contingency	0	0	0	0	0
Debt Service	<u>0</u>	<u>7,446</u>	<u>219,750</u>	<u>5,100</u>	<u>279,435</u>
TOTAL	<u>2,102,921</u>	<u>2,937,674</u>	<u>3,386,325</u>	<u>5,705,623</u>	<u>5,610,945</u>
(First 5 Items)	(2,018,002)	(2,519,164)	(2,895,779)	(4,074,849)	(3,327,066)

1/ Included under Licenses, Permits above.

2/ Break-line: This item and those below exempted from later analysis.

3/ Capital Improvements \$345,009  
Industrial Development \$742,212

4/ Capital Outlay \$751,624

5/ Other: \$673,725

SOURCE: Auditor's Reports, 6-30-82.



Mt. Hope Molybdenum Project

Table 3-53 Regression Analysis of County Expenditures Per Capita: Variation with Size of Population (Year Ending June 30, 1982) Audited Budgets

	<u>Eureka</u>	<u>Mineral</u>	<u>Humboldt</u>	<u>Lyon</u>	<u>Elko</u>
<b>I. DATA BASE</b>					
Population (1982)	1,395	6,286	11,816	15,235	19,875
Est. Future	2,000	-	-	-	20,333
Est. Future	3,000	-	-	-	20,666
Est. Future	4,000	-	-	-	21,000
Expenditures: Per Capita (1982) With 1982 Populations Shown Above(\$):					
General Government	395	168	90	116	58
Public Safety	164	97	68	67	47
Judicial	66	26	29	20	13
Streets, Hiway	342	64	53	61	37
Health, Welfare	480	46	5	4	13
TOTAL ABOVE	1,447	401	245	268	168
<b>II. OUTPUT OF REGRESSION MODEL:</b>					
Predicted Values of Expenditures Capita, with Population as Above (\$).					
Gen'l Gov't	320	241	151	95	20
	310				12.5
	294				7
	278				1.6
Publ. Safety	144	116	83	63	36
	141				33
	135				31
	129				29.5
Judicial	54	42	29	20	9
	53				7.7
	50				7
	48				6
Streets, Hiway	242	175	99	52	-11.7
	234				-18
	220				-22
	206				-27
Health, Welf.	319	211	90	15	-87
	305				-97
	283				-104
	261				-112
Total	1,080	785	452	246	-34
	1,043				-61
	983				-81
	923				-102



each of the six main budget items. For Mineral, Humboldt, and Lyon Counties, the 1982 populations remained fixed and the predicted costs per capita may be compared with the actual costs shown in Section I of Table 3-53. Considerable variation from actual is noted, more for these counties than for Eureka, for which the model tends to understate costs. The attempt to forecast Elko County from this series was demonstrated to be flawed primarily because Elko is the top of the range of entered data and has no higher level populations and costs derived from larger-size counties to draw upon as a guide. Elko predictions from this data base were therefore considered non-valid. Larger counties in Nevada moved too rapidly to extreme size to serve as valid entries in the analysis: the next larger in size was Carson City (33,929), then Washoe (208,321) and Clark (515,021). Since the maximum population increase forecasted for Elko would be 669 (Case 5-B) or only 3.3 percent above existing levels of 19,875, the large population increases available for entry into the model for predictive use could not be held to be reliable.

For the existing data base, Table 3-54 presents the regression equations in detail, to show that the correlation coefficient is at better predictive levels (for the data used) than was the case with Eureka School Districts. That is, in most of the six items listed for regression, the coefficient is 0.77 or higher (a number closest to 1.00 being most reliable). For four of the six items, the correlation coefficient is of a higher order than obtained in the Eureka School District analysis, which used comparisons among the lowest school-enrollment districts. In part, this reflects the fact that irregularities in data, even among selected populations, will be reproduced within the regression equation and that no smooth and guaranteed route exists in the real world to "prove" any given level or rate of decline, other than to point the general direction given by the numeral entries into the data array.

The multiple used for restating the understated values predicted by the model of Eureka County costs is shown for each of the six cost items in Section I of Table 3-55. For General Government expenditures, the multiple was \$395 actual/\$320 predicted or 1.2344 times. The other multiples are explained in the same way. Using these multiples of correction, Section II shows the corrected level of 1982 costs in each item for a population of



Mt. Hope Molybdenum Project

Table 3-54 Linear Regression Models of County Cost  
5-County Population Expenditures

	Gen'l. Gov't.	Public Safety	Judi- cial	Streets Hiways	Health Welf.	Total
Y-Intercept	342.85	152.60	57.65	261.59	349.25	1,163.93
Slope	-0.02	-0.01	-0.00	-0.01	-0.02	-0.06
Correl. Coeff.	-0.88	-0.93	-0.87	-0.77	-0.77	-0.82
Index Determin.	0.77	0.87	0.75	0.60	0.59	0.68
	0.23	0.13	0.25	-	0.41	0.32
	27.37	5.39	4.55	46.42	76.07	153.75
	136.86	10.78	22.73	232.12	380.35	768.73
	3.00	3.00	3.00	3.00	3.00	3.00
St. Error Regr.	6.75	0.68	2.75	8.80	11.25	16.01
	14,476.64	28,070.99	339.76	13,381.84	34,533.04	227,102.96
	269.04	3,746.40	41.22	258.67	415.53	1,065.61
St. Error Slope	0.51	0.00	0.07	0.03	0.03	0.02

1. Per Capita Cost =  $\text{Slope} + \text{Y-Intercept}$  (Ex:  $X = -0.02 + 342.85$  for Col. 1).  
Where Population = Slope
2. Correlation Coefficient closest to one is better predictor for data points within relevant range of per capita expenditures.
3. Standard Error of Regression Line closest to zero is better predictor; actual future costs will be  $\pm 2 \times 6.75$  (Col. 1) + the estimated costs.
4. Standard Error of Slope (0.51 for Col. 1) measures variable costs deviation from actual equal to (slope)  $-0.02 \pm 2 \times 0.51$ . The smaller value is the more accurate predictor.

For General Government in Eureka, the model predicts per capita costs of \$320 (actual \$395). Expected Time Range given by the data is shown by the Standard Error of Regression:

$$(\pm 2 \times 6.75) \text{ or: } 13.50 + 320 = 333.50$$

$$13.50 + 320 = 306.50$$



1,395 and the related predicted costs (also subject to the multiple) for populations of 2,000, 3,000, and 4,000. Sample results for Elko County are shown merely for comparison.

Table 3-56 shows the six cost items used for summary analysis in the amounts obtained for 1982/83. The costs were rearranged from the unadjusted numbers, as they included entries additional to those under examination (e.g., as explained above, one-time costs, etc.), and the entry for culture/recreation was omitted, in accordance with its omission in the 5-county regression analysis. The population of Eureka used in the study (1,184) and the levels of costs (\$905,445) produced a per capita base year cost of \$764.73 as a total cost of Eureka County per capita. This cost level is below that predicted by the model and the multiple of correction becomes the following:  $\$765/\$1,080$  (predicted value) equals 0.7083 times (the unadjusted forecast).

The forecasted costs per capita for Eureka County with rise in population levels are shown on Table 3-57 for normal populations without the proposed action increase, for normal populations with the proposed action, and for the dispersed personnel alternative case 5-B (for comparative purposes). The forecasted rise in annual population levels is shown in Section I of Table 3-57, along with the unadjusted forecast of costs per capita under the three conditions of population given. Adjustment of the cost forecast was made by applying the multiplier throughout to the cost per capita shown annually for 1984 (assumed to be year 1 for analytical purposes) through year 2000 (year 17). The costs per capita have the following tendencies:

	<u>Normal</u>	<u>Subdivision Case 5-A</u>	<u>Dispersed Personnel Case 5-B</u>
1984	\$773	\$734	\$736
1990	\$749	\$696	\$702
2000	\$733	\$679	\$686

Expenditure Budget Summary for Eureka County and School District. The per capita costs (school and county) were combined with the population growth forecasted as annual levels to produce the annual total forecasted expenditures shown on Tables 3-58 and 3-59. As the forecast on Table 3-59 indicates



Mt. Hope Molybdenum Project

Table 3-55 Possible Application of County Regression Analysis of Declining Expenditures Per Capita (Audited Budget Data Comparisons)

I. Recognized Level of Error:

(Adjustment needed to equal actual 1982 Expend./Capita) 1/

	<u>Eureka</u>	<u>Elko 2/</u>
At Population Level:	1,395	19,875
General Gov't.	1.2344	2.9000
Public Safety	1.1389	1.3056
Judicial	1.2222	1.4444
Streets, Hiways	1.4132	-
Health, Welfare	1.5047	-
Total Above	1.3398	

II. Adjusted Expenditures per Capita Using Multiples Above as Population Grows:

	<u>Eureka County</u>				<u>Elko County</u>				<u>2/</u>
Population	1,395	2,000	3,000	4,000	19,875	20,333	20,666	21,000	
Gen'l. Govt.	395	383	363	343	58	36	20	5	
Publ. Safety	164	161	154	147	47	43	40	39	
Judicial	66	65	61	59	13	11	10	9	
Streets, Hiway	342	331	301	291	-				
Health, Welf.	480	459	426	393	-				
Total Above	1,447	861	819	776	-				

NOTE: "Range" of adjusted model predictions (variation from single point given above) is shown in notes on preceding table.

1/ Multiple derived by dividing actual value by model-predicted value for base case (i.e., with population 1,395 and/or 19,875). Constant multiplier is used for each new level of population estimated for Eureka and Elko.

2/ Large errors invalidate model. Use of Elko in last position is reason for error level, which borrows arithmetic from lower level populations rather than higher, i.e., Elko population estimates are outside range of data points.



Mt. Hope Molybdenum Project

Table 3-56 Application of Adjustments to Forecast of Eureka County Revenues and Expenditures

---

REVENUES

Same forecast basis as Eureka School District. 1/

1. Sales Taxes (omitting 2% to State General Fund)
2. Ad Valorem Property Taxes.

EXPENDITURES

Forecast Basis:

1. Total reported expenditures, unadjusted, as follows, but omitting "Culture, Recreation" from accounts.

	<u>Unadjusted</u> (1982/83)	<u>Restated 2/</u> (1982/83)
1. Gen'l. Admin.	87,525	351,500 (1+8+9)
2. Public Safety	228,270	255,770 (2+6)
3. Judicial	124,555	124,555 (3)
4. Streets, Hiway	30,900	30,900 (4)
5. Health, Welfare	-	142,720 (7+10)
6. Fire	27,500	
7. Health	110,720	
8. Other Depts.	239,745	
9. Other	24,230	
10. Welfare	32,000	
11. Culture, Recreation	<u>76,855</u>	
TOTAL	<u>982,300</u>	<u>905,445</u>
PER CAPITA (Population 1,184):		\$764.73 <u>3/</u>

---

1/ Not forecasted on Per Capita Basis, but derived directly as shown from specified forecast items (as in original study.)

2/ Forecast is annual sums above, stated as Per Capita Expenditures x county population with and without project, under conditions of declining costs per capita given by regression analysis.

3/ Adjustment of model is  $765/1,080$  (Real/Predicted) =  $0.7083 \times$  Predicted.



Table 3-57 County Cost Economies of Scale Unadjusted and Adjusted 1/

## I. UNADJUSTED MODEL OF COUNTY COST ECONOMIES OF SCALE

1. Using Forecasted Populations.
2. Total County Expenditures Basis (First 5 Items).

Forecasted Population of County:						Cost Forecast (\$):		
	Normal	(+)5-A	5-B	Total (with)		Normal	5-A	5-B
				5-A	5-B			
1984	1,200	920 <u>2/</u>	869 <u>2/</u>	2,120	2,069	1,092	1,036	1,039
5	1,451	2,907	2,564	4,358	4,015	1,076	907	922
6	1,513	1,640	1,183	3,153	2,696	1,073	974	1,001
7	1,575	1,255	1,106	2,830	2,681	1,069	993	1,002
8	1,637	"	"	2,892	2,743	1,065	990	999
9	1,699	"	"	2,954	2,805	1,062	986	995
1990	1,762	"	"	3,017	2,868	1,057	982	991
1	1,801	"	"	3,056	2,907	1,055	980	989
2	1,837	"	"	3,092	2,943	1,053	978	987
3	1,873	"	"	3,128	2,979	1,051	975	984
4	1,909	"	"	3,164	3,015	1,049	973	982
1995	1,945	"	"	3,200	3,051	1,047	971	980
6	1,985	"	"	3,240	3,091	1,044	969	978
7	2,025	"	"	3,280	3,131	1,042	966	975
8	2,065	"	"	3,320	3,171	1,039	964	973
9	2,105	"	"	3,360	3,211	1,037	961	970
2000	2,145	"	"	3,400	3,251	1,035	959	968

 II. ADJUSTED MODEL COST FORECAST WITH MULTIPLE (0.7083X)  
 TO 1982/83 BASIS (\$):

	Normal	(Plus)	Case 5-A	(or)	Case 5-B
1984	773		734		736
5	762		642		653
6	760		690		709
7	757		703		710
8	754		701		708
9	752		698		705
1990	749		696		702
1	747		694		701
2	746		693		699
3	744		691		697
4	743		689		696
1995	742		688		694
6	739		686		693
7	738		684		691
8	736		683		689
9	735		681		687
2000	733		679		686

1/ Assume 1984 as Year 1.

2/ Net project populations added to normal under alternative cases: New Community, or Dispersed Personnel.



Expenditures With the Project are shown at higher annual levels than Expenditures Without the Project. The difference between the two are Net Expenditures; shown in this fashion because annually reduced costs per capita of county population or of school enrollments would be a joint product of combined project and non-project populations. Although annual total expenditures would rise throughout the forecast, it is noted that the Net Expenditures would decline annually to lower levels. The annual decline would result as stabilized project populations became a decreasing proportion of total annual populations, which would continue to increase year-by-year.

It is important to note that the regression analysis reflects the data put into it, including the unexplained reasons for particular levels of cost which may bias the outcome of the forecast. The nature of intergovernmental funding and of local dependence upon makeshift efforts at financing growing levels of cost, while laboring under a State-imposed cap on local taxation, produces variables which would erode the potential for accuracy in any forecast. The regression analysis itself translates a simultaneous condition affecting five or six counties (or school districts) into an event that occurs over time, and applies this information to Eureka County (or school district). While mathematically an accurate representation of the numbers given, it presumes a time dimension which the data do not suggest. Alternative use of sequential years of spending, to incorporate the time dimension, might focus entirely upon Eureka's budgets over the period 1975-1983. But results of this series would be troubled by the fluctuations in Eureka's population (or student body), and by the need to correct for annual levels of inflation. This procedure, in the absence of clear growth trends, would be inherently weaker than the comparative analysis used above and was therefore not implemented in the fiscal analysis.

Revenues Distribution. The application of the forecasted expenditures (both Eureka County adjusted and Elko County unadjusted) must be correlated to detailed revenue distribution projections in order that a final budget deficit/surplus evaluation can be conducted.

Projections of future revenue requirements to support the future expenditures confront two fundamental problems. The first of these is that



Mt. Hope Molybdenum Project

Table 3-58 Net Quarterly Expenditures Generated By Project as Year-End Totals (\$000)

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
<u>Subdivision Case 5-A</u>				
Eureka County				
Gross Expenditures				
With Project	1,556	2,798	2,176	1,989
Without Project	<u>928</u>	<u>1,106</u>	<u>1,150</u>	<u>1,192</u>
Net Expenditures	628	1,692	1,026	797
Eureka Schools				
Gross Expenditures				
With Project	1,358	2,058	2,028	2,044
Without Project	<u>1,072</u>	<u>1,249</u>	<u>1,292</u>	<u>1,334</u>
Net Expenditures	286	809	736	710
<u>Dispersed Personnel Case 5-B</u>				
Eureka County				
Gross Expenditures				
With Project	1,523	2,622	1,911	1,904
Without Project	<u>928</u>	<u>1,106</u>	<u>1,150</u>	<u>1,192</u>
Net Expenditures	595	1,516	761	712
Eureka Schools				
Gross Expenditures				
With Project	1,316	1,951	1,875	1,894
Without Project	<u>1,072</u>	<u>1,249</u>	<u>1,292</u>	<u>1,334</u>
Net Expenditures	244	702	583	560



Mt. Hope Molybdenum Project

Table 3-59 Annual Budget Balances: Years 4-15 1987-1998 (\$000)

	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
<b>I. Subdivision Case 5-A</b>												
<u>Eureka County</u>												
Expenditures w/project	2,212	2,249	2,282	2,320	2,340	2,362	2,380	2,398	2,458	2,439	2,460	2,483
Expenditures without	1,192	1,234	1,278	1,320	1,345	1,370	1,394	1,418	1,443	1,467	1,494	1,520
Net Expenditures 1/	<u>1,020</u>	<u>1,015</u>	<u>1,004</u>	<u>1,000</u>	<u>995</u>	<u>982</u>	<u>986</u>	<u>980</u>	<u>976</u>	<u>972</u>	<u>966</u>	<u>963</u>
<u>Eureka Schools</u>												
Gross Expenditures												
With Project	2,044	2,061	2,078	2,093	2,102	2,110	2,119	2,126	2,133	2,140	2,148	2,154
Without Project	1,334	1,375	1,415	1,453	1,476	1,498	1,519	1,541	1,561	1,582	1,605	1,625
Net Expenditures 1/	<u>710</u>	<u>686</u>	<u>663</u>	<u>640</u>	<u>626</u>	<u>612</u>	<u>600</u>	<u>585</u>	<u>572</u>	<u>558</u>	<u>543</u>	<u>529</u>
<b>II. Dispersed Personnel Case 5-B</b>												
<u>Eureka County</u>												
Expenditures w/project	1,905	1,943	1,979	2,015	2,039	2,058	2,078	2,100	2,119	2,143	2,165	2,186
Expenditures without	1,192	1,234	1,278	1,320	1,345	1,370	1,394	1,418	1,443	1,467	1,494	1,520
Net Expenditures 1/	<u>713</u>	<u>709</u>	<u>701</u>	<u>695</u>	<u>694</u>	<u>688</u>	<u>684</u>	<u>682</u>	<u>676</u>	<u>676</u>	<u>671</u>	<u>666</u>
<u>Eureka Schools</u>												
Gross Expenditures												
With Project	1,894	1,918	1,941	1,964	1,977	1,989	2,001	2,013	2,024	2,035	2,047	2,058
Without	1,334	1,375	1,415	1,453	1,476	1,498	1,519	1,541	1,561	1,582	1,605	1,625
Net Expenditures 1/	<u>560</u>	<u>543</u>	<u>526</u>	<u>511</u>	<u>501</u>	<u>491</u>	<u>482</u>	<u>472</u>	<u>463</u>	<u>453</u>	<u>442</u>	<u>433</u>

1/ Due to project only, expenditures include effects of economies of scale and reduced levels of fixed spending as indicated in text. Revenues derive wholly from project-related taxes paid. Revenues are not per capita calculations; expenditures are per capita calculations.



local budgets show revenue items from local, state and federal sources; i.e., only some of the revenues derive from local populations (Table 3-54). This means that normal operating budgets are subsidized out of externally derived funds, and that "per capita" revenues as a measure of future requirements is without relevance to any forecast. Unlike the per capita expenditures discussed previously which relate to local departmental costs within each of the seven jurisdictions, per capita revenues do not relate to local revenues derived from within the jurisdictions. The jurisdictions are not now self-supporting, because local taxation derived from local populations is insufficient.

The second problem relates to the allocations of locally-derived tax revenues. The ad valorem property tax is allocated, at the discretion of the Counties, differently in Elko than in Eureka. School support gets less percentage in Elko than in Eureka, county allocations are less in Elko than in Eureka, and cities and towns receive more in Elko. Both counties allocate to Special Districts a percentage of property tax revenues which do not appear in the budgets of the seven jurisdictions (in Elko County the amount is 19 percent). Local budgetary allocations are fixed by legislation, and existing deficits in meeting normal local operating expenditures are partly a product of this allocation.

Local tax revenues derived from State sales taxes are only partially allocated to local budgets, which in turn receive externally derived funds from "gaming" and vehicle licensure (statewide). Local populations forfeit to the State General Fund the first two percent of the 5.75 percent sales tax collected in Eureka and Elko Counties, which denies 35 percent of locally generated sales tax revenues to the local jurisdictional budgets. Supplemental CCRT revenues, which are a component of State sales taxes, are allocated by the State according to a formula, so that the total amounts generated locally may not remain within local jurisdictions. Table 3-32 shows that \$995,000 CCRT revenues were received by five of the seven jurisdictions. This component of the sales tax represents 46.66 percent of the total tax, after loss of the first two percent to the State General Fund. Further erosion of this component of the tax base, by formula, seriously affects the ability of local jurisdictions to maintain, out of locally produced revenues, the budgetary balance demanded by local expenditures. The net result of these tax trade-offs is a



local dependence upon externally derived revenues.

Individual Revenue Accounts. Tables 3-60 through 3-69 provide detail concerning the final forecasted distribution of received revenues. The data presented represent a further examination of the total generated project revenue base discussed in Section 3.4.4.2. (The following subsection details the cumulative effect of the distributed revenues versus the net expenditures of the seven jurisdictions.)

Each tax component entered into the tables is based upon directly traceable economic activity levels of the Mt. Hope Project and its attendant populations. In no part of the foregoing analysis were revenues used which originated in estimates of per capita revenues derived from current jurisdictional budgets.

Quarterly revenue accounts are shown on Tables 3-60 and 3-61 according to relevant tax account. The quarterly revenues are summed on Table 3-62, which distinguishes between property tax revenues and sales tax revenues. The property tax revenues are lagged one year to reflect the time of collection. There is, therefore, a carryover of property tax revenue from the quarterly forecast into the annual forecasts year 5-6; for this reason, taxes incurred in year 4 are shown as year 5 revenues.

Annual forecasts of individual tax components in the total revenue generated are shown on Table 3-63.

#### 3.4.4.4 Budgetary Impacts of the Mt. Hope Project - Unadjusted

Unadjusted Budget Forecast. Aggregate local tax revenues generated by directly traceable economic activities of the Mt. Hope project in each of the seven jurisdictions, are compared in this section with the aggregate levels of expenditures of the seven jurisdictions which derive from a fixed per capita expenditure level based upon most-recent-year budget accounts (Tables 3-33 and 3-39). The annual totals which are compared reflect no adjustments for a declining cost level per person which most probably would be encountered with a rising population (see text under following subtitle "Adjusted Budget



Mt. Hope Molybdenum Project

Table 3-60 Ad Valorem Residential Property Tax Revenues and Distributions: Eureka, Elko Jurisdictions Derived from Direct-Hire and Generated Employment (\$)

		Year 1		Year 2		Year 3		Year 4	
		3Q		1Q		1Q		1Q	
		4Q		2Q		2Q		2Q	
		3Q		3Q		3Q		3Q	
		4Q		4Q		4Q		4Q	
		3Q		4Q		3Q		3Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q		1Q		1Q	
		3Q		4Q		2Q		2Q	
		4Q		1Q					



## Mt. Hope Molybdenum Project

Table 3-61 Tax Revenues Generated by Project Quarterly During First Four Years (As Incurred) (\$ Rounded)

	Year 1				Year 2				Year 3				Year 4	
	3Q		4Q		1Q		2Q		3Q		4Q		1Q	
Subdivision Case 5-A														
Eureka County														
Resid. Prop.	170	1,490	3,340	4,560	5,460	6,030	6,430	6,680	6,920	7,000	7,060	7,070		
Personal Sales Tax	1,500	12,250	25,660	32,780	36,105	38,604	40,200	39,140	25,400	21,770	21,100	20,920		
Mine/Mill Prop.	12,700	12,700	26,060	26,060	26,060	26,060	44,490	44,490	44,490	44,490	56,570	56,570		
Mine Sales Tax														
(CCRT)	19,560	19,560	38,040	38,040	38,040	38,040	60,900	60,900	60,900	60,900	33,700	3,370		
(Suppl. CCRT)	68,500	68,500	133,150	133,150	133,150	133,150	213,040	213,040	213,040	213,040	117,930	11,793		
Eureka Schools														
Resid. Prop.	350	3,070	6,880	9,400	11,250	12,410	13,240	13,760	14,250	14,420	14,450	14,560		
Pers. Sales	390	3,150	6,600	8,930	9,250	9,920	10,340	8,760	6,520	5,600	5,430	5,380		
Mine/Mill Prop.	26,180	26,180	53,660	53,660	53,660	53,660	91,620	91,620	91,620	91,620	115,660	115,66		
Mine Sales	58,700	58,700	114,140	114,140	114,140	114,140	182,630	182,630	182,630	182,630	101,100	101,100		
Eureka Town														
Resid. Prop.	-	-	-	20	20	20	20	30	30	30	30	30		
Mine/Mill Prop.	50	50	110	110	110	110	190	190	190	190	240	240		
Pers. Sales	6	40	90	110	130	130	140	120	90	70	70	70		
Elko County														
Resid. Prop.	0	150	420	740	910	1,050	1,150	1,150	1,010	910	910	960		
Pers. Sales Tax	0	100	300	530	670	780	860	890	800	770	820	830		
Elko Schools														
Resid. Prop.	-	290	820	1,470	1,810	2,080	2,280	2,280	2,000	1,810	1,810	1,900		
Pers. Sales Tax	0	90	260	440	570	660	750	760	690	660	690	700		
Elko City														
Resid. Prop.	-	40	130	220	280	320	350	350	350	280	280	290		
Pers. Sales Tax	0	190	570	1,000	1,280	1,480	1,650	1,690	1,530	1,480	1,550	1,580		
Carlin Town														
Resid. Prop.	-	-	10	10	20	20	20	20	20	20	20	20		
Pers. Sales Tax	0	40	130	190	290	340	370	390	360	330	360	360		



Mt. Hope Molybdenum Project

Table 3-62 Quarterly Tax Revenues Generated by Project as Year-End Totals  
(1 Year Time Lag Property Taxes) (\$)

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<u>Subdivision Case 5-A</u>					
Eureka County					
Property	0	27,060	123,630	204,990	254,550
Sales	189,900	817,900	1,217,300	690,380	
Total	190,000	845,000	1,341,000	895,000	
Eureka Schools					
Property	0	55,780	254,580	422,150	520,770
Sales	120,900	490,800	761,740	425,970	
Total	121,000	547,000	1,016,000	848,000	
Eureka Town					
Property	0	100	500	870	1,080
Sales	50	460	420	280	
Total	-	-	1,000	1,000	
Elko County					
Property	0	150	3,120	4,220	3,790
Sales	100	2,280	3,320	3,310	
Total	-	2,000	6,000	7,000	
Elko Schools					
Property	0	290	6,180	8,370	7,510
Sales	90	1,930	2,860	2,780	
Total	-	2,000	9,000	11,000	
Elko City					
Property	0	40	950	1,290	1,150
Sales	190	4,330	6,350	6,290	
Total	-	4,000	7,000	8,000	
Carlin Town					
Property	0	0	70	80	80
Sales	40	900	1,450	1,440	
Total	-	1,000	1,000	1,000	



Mt. Hope Molybdenum Project

Table 3-63 Tax Revenues Generated by Project Annually (Rounded) 1/

Subdivision Case 5-A	4	5	6	7	8	9	10	11	12	13	14	15
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Eureka County												
Residential Property	27,000	28,300	28,300	28,300	28,300	28,300	28,300	28,300	28,300	28,300	28,300	28,300
Personal Sales Tax												
(CCRT)	83,400	83,400	83,400	83,400	83,400	83,400	83,400	83,400	83,400	83,400	83,400	83,400
Mine/Mill Property	192,100	330,100	330,100	340,900	340,900	340,900	340,900	361,100	361,100	361,100	252,500	252,500
Mine Sales Tax (CCRT)	134,800	126,100	126,100	126,100	126,100	126,100	126,100	126,100	143,500	143,500	143,500	143,500
(Suppl. CCRT)	471,700	441,300	441,300	441,300	441,300	441,300	441,300	502,200	502,200	502,200	502,200	502,200
Total	909,000	1,009,200	1,009,200	1,009,200	1,009,200	1,009,200	1,009,200	1,080,900	1,098,300	1,098,300	1,098,300	1,098,300
Eureka Schools												
Residential Property	55,700	58,200	58,200	58,200	58,200	58,200	58,200	58,200	58,200	58,200	58,200	58,200
Personal Sales Tax	21,400	21,400	21,400	21,400	21,400	21,400	21,400	21,400	21,400	21,400	21,400	21,400
Mine/Mill Property	395,600	679,900	679,900	702,000	702,000	702,000	702,000	743,700	743,700	743,700	520,100	520,100
Mine Sales Tax	404,400	378,300	378,300	378,300	378,300	378,300	378,300	430,500	430,500	430,500	430,500	430,500
Total	877,100	1,137,800	1,137,800	1,137,800	1,137,800	1,137,800	1,137,800	1,212,100	1,212,100	1,212,100	1,212,100	1,212,100
Eureka Town												
Mine/Mill Property	800	1,400	1,400	1,400	1,400	1,400	1,400	1,500	1,500	1,500	1,070	1,070
Personal Sales Tax	300	300	300	300	300	300	300	300	300	300	300	300
Residential Property	110	120	120	120	120	120	120	120	120	120	120	120
Total	1,200	1,800	1,800	1,800	1,800	1,800	1,800	1,900	1,900	1,900	1,900	1,900
Elko County												
Residential Property	4,200	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800
Personal Sales Tax												
(CCRT)	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300
Total	7,500	7,100	7,100	7,100	7,100	7,100	7,100	7,100	7,100	7,100	7,100	7,100
Elko Schools												
Residential Property	8,400	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
Personal Sales Tax	2,790	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800
Total	11,200	10,300	10,300	10,300	10,300	10,300	10,300	10,300	10,300	10,300	10,300	10,300
Elko City												
Residential Property	1,300	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100
Personal Sales Tax	6,190	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200	6,200
Total	7,500	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300
Carlin Town												
Residential Property	80	80	80	80	80	80	80	80	80	80	80	80
Personal Sales Tax	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420
Total	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500

1/ Ad Valorem Property Taxes are lagged one year from year incurred.



Mt. Hope Molybdenum Project

Table 3-64 Net Quarterly Expenditures Generated by Project at Year-End Totals and Project Generated Revenues (\$000)

	<u>Year 1</u> <u>1/</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
<u>Subdivision Case 5-A</u>				
Eureka County. Exp.	\$206	\$1,992	\$1,815	\$1,255
Proj. Revenues	190	845	1,341	909
Eureka School Exp.	280	2,711	2,470	1,701
Proj. Rev.	121	547	1,016	877
Eureka Town Exp.	26	229	155	56
Proj. Rev.	-	-	1	1
Elko County Exp.	1	23	34	32
Proj. Rev.	-	2	6	7
Elko Schools Exp.	3	70	104	103
Proj. Rev.	-	2	9	11
Elko City Exp.	2	35	52	52
Proj. Rev.	-	4	7	7
Carlin Town Exp.	-	2	4	4
Proj. Rev.	-	1	1	1

1/ Year 1 calculated on basis of third quarter start-up; therefore only a partial year.



Mt. Hope Molybdenum Project

Table 3-65 Annual Budget Balances: Year 4-Year 15 (\$000)

Year	4	5	6	7	8	9	10	11	12	13	14	15
<b>Subdivision Case 5-A</b>												
<b>Eureka County</b>												
Net Gain With (Revised)	909	1,009	1,009	1,009	1,009	1,009	1,009	1,081	1,098	1,098	1,098	1,098
Expenditures With (Net)	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250
<b>Eureka Schools</b>												
Net Gain With	877	1,138	1,138	1,138	1,138	1,138	1,138	1,212	1,212	1,212	1,212	1,212
Expenditures With (Net)	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698
<b>Eureka Town</b>												
Net Gain With	1	2	2	2	2	2	2	2	2	2	2	2
Expenditures With (Net)	56	56	56	56	56	56	56	56	56	56	56	56
<b>Elko County</b>												
Net Gain With	7	7	7	7	7	7	7	7	7	7	7	7
Expenditures With (Net)	32	32	32	32	32	32	32	32	32	32	32	32
<b>Elko Schools</b>												
Net Gain With	11	10	10	10	10	10	10	10	10	10	10	10
Expenditures With (Net)	101	101	101	101	101	101	101	101	101	101	101	101
<b>Elko City</b>												
Net Gain With	7	7	7	7	7	7	7	7	7	7	7	7
Expenditures With	50	50	50	50	50	50	50	50	50	50	50	50
<b>Carlin Town</b>												
Net Gain With	1	1	1	1	1	1	1	1	1	1	1	1
Expenditures With	3	3	3	3	3	3	3	3	3	3	3	3



Mt. Hope Molybdenum Project

Table 3-66 Extended Average Annual Budget Balances in 5-Year Intervals (\$000) 1/

	Year 15-19	Year 20-24	Year 25-29	Year 30-34	Year 35-39	Year 40-44	Year 45-49	Year 50-54
I. Subdivision Case 5-A								
Eureka County: Net Expenditures	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250
Net Gain With (Revised)	910	923	923	923	923	923	923	923
Mine/Process Plant Contrib.	798	811	811	811	811	811	811	811
Eureka Schools: Net Expenditures	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698
Net Gain With	1,124	1,150	1,150	1,150	1,150	1,150	1,150	1,150
Mine/Process Plant Contrib.	1,044	1,070	1,070	1,070	1,070	1,070	1,070	1,070

1/ Time lag in Property Taxes occurs only in fifth to sixth year. Not adjusted.



Mt. Hope Molybdenum Project

Table 3-67 Net Quarterly Revenues and Expenditures Generated by Project as Year-End Totals (\$000)

	<u>Year 1</u> <u>1/</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u> <u>2/</u>
<u>Subdivision Case 5-A</u>					
<u>Eureka County</u>	<u>190</u>	<u>845</u>	<u>1,341</u>	<u>895</u>	
Property Revenue	0	27	124	205	254
Sales Revenue	190	818	1,217	690	
Expenditures w/project	1,556	2,798	2,176	1,989	
without	928	1,106	1,150	1,192	
Net Expenditures	<u>628</u>	<u>1,692</u>	<u>1,026</u>	<u>797</u>	
<u>Eureka Schools</u>	<u>121</u>	<u>547</u>	<u>1,016</u>	<u>848</u>	
Property Revenue	0	56	254	422	521
Sales Revenue	121	491	762	426	
Expenditures w/project	1,358	2,058	2,028	2,044	
without	1,072	1,249	1,292	1,334	
Net Expenditures	<u>286</u>	<u>809</u>	<u>736</u>	<u>710</u>	

1/ Year 1 (assumed 1984) revenues reflect one-half year mine/process plant startup, but 1984 expenditures are full-year, with and without mine/process plant.

2/ Property revenue generated in year 4 carried forward to year 5.



Mt. Hope Molybdenum Project

Table 3-68 Annual Budget Balances: Years 4-15 1987-1998 (\$000)

	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
<b>I. Subdivision Case 5-A</b>												
<u>Eureka County</u>												
Net Revenues w/project	909	1,009	1,020	1,020	1,020	1,020	1,020	1,118	1,118	1,118	1,118	1,118
Expenditures w/project	2,212	2,249	2,282	2,320	2,340	2,362	2,380	2,398	2,458	2,439	2,460	2,483
Expenditures without	1,192	1,234	1,278	1,320	1,345	1,370	1,394	1,418	1,443	1,467	1,494	1,520
Net Expenditures 1/	1,020	1,015	1,004	1,000	995	982	986	980	976	972	966	963
<u>Eureka Schools</u>												
Net Revenues w/project	877	1,138	1,138	1,160	1,160	1,160	1,160	1,254	1,254	1,254	1,254	1,254
Gross Expenditures												
With Project	2,044	2,061	2,078	2,093	2,102	2,110	2,119	2,126	2,133	2,140	2,148	2,154
Without Project	1,334	1,375	1,415	1,453	1,476	1,498	1,519	1,541	1,561	1,582	1,605	1,625
Net Expenditures 1/	710	686	663	640	626	612	600	585	572	558	543	529
<b>II. Dispersed Personnel Case 5-B</b>												
<u>Eureka County</u>												
Net Revenues w/project	880	978	978	989	989	989	989	1,088	1,088	1,088	1,088	1,088
Expenditures w/project	1,905	1,943	1,979	2,015	2,039	2,058	2,078	2,100	2,119	2,143	2,165	2,186
Expenditures without	1,192	1,234	1,278	1,320	1,345	1,370	1,394	1,418	1,443	1,467	1,494	1,520
Net Expenditures 1/	713	709	701	695	694	688	684	682	676	676	671	666
<u>Eureka Schools</u>												
Net Revenues w/project	860	1,119	1,119	1,141	1,141	1,141	1,141	1,235	1,235	1,235	1,235	1,235
Gross Expenditures												
With Project	1,894	1,918	1,941	1,964	1,977	1,989	2,001	2,013	2,024	2,035	2,047	2,058
Without	1,334	1,375	1,415	1,453	1,476	1,498	1,519	1,541	1,561	1,582	1,605	1,625
Net Expenditures 1/	560	543	526	511	501	491	482	472	463	453	442	433

1/ Due to project only, expenditures include effects of economies of scale and reduced levels of fixed spending as indicated in text. Revenues derive wholly from project-related taxes paid. Revenues are not per capita calculations; expenditures are per capita calculations.



Mr. Hope Molybdenum Project

Table 3-69 Net Project-Related Mid-Term Budgetary Shortfalls in Individual Accounts 1/  
Proposed Action (\$000)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
<b>Decentralized Workforce Case 5-B</b>															
<b>Eureka County</b>															
Expenditures															
Revenues	628	1,692	1,026	1,020	1,015	1,004	1,000	995	982	886	980	976	972	966	963
Balance	190	845	1,341	909	1,009	1,020	1,020	1,020	1,020	1,020	1,118	1,118	1,118	1,118	1,118
	-438	-847	315	-111	-6	16	20	252	25	134	138	142	146	152	155
<b>Eureka Schools</b>															
Expenditures	286	809	736	710	686	663	640	626	612	600	585	572	558	543	529
Revenues	121	547	1,016	877	1,138	1,138	1,160	1,160	1,160	1,160	1,254	1,254	1,254	1,254	1,254
Balance	-165	-262	-280	-167	-452	-475	-520	-534	-534	-560	-669	-682	-696	-711	-725
<b>Eureka Town</b>															
Expenditures	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
Revenues	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Balance	-56	-55	-55	-55	-55	-55	-55	-55	-55	-55	-55	-55	-55	-55	-55
<b>Elko County</b>															
Expenditures	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Revenues	0	2	6	7	7	7	7	7	7	7	7	7	7	7	7
Balance	-32	-30	-26	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
<b>Elko Schools</b>															
Expenditures	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Revenues	0	2	9	11	10	10	10	10	10	10	10	10	10	10	10
Balance	-101	-92	-92	-90	-91	-91	-91	-91	-91	-91	-91	-91	-91	-91	-91
<b>Elko</b>															
Expenditures	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Revenues	0	4	7	7	7	7	7	7	7	7	7	7	7	7	7
Balance	-50	-46	-43	-43	-43	-43	-43	-43	-43	-43	-43	-43	-43	-43	-43
<b>Carlin</b>															
Expenditures	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Revenues	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Balance	-3	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
<b>TOTAL</b>															
Expenditures	1,156	2,743	2,004	1,972	1,943	1,909	1,882	1,863	1,836	1,728	1,807	1,790	1,772	1,751	1,734
Revenues	311	1,402	2,381	1,813	2,173	2,184	2,206	2,206	2,206	2,206	2,398	2,398	2,398	2,398	2,398
Balance	-845	-1,341	-377	-159	-230	-275	-324	-343	-370	-478	-591	-608	-626	-647	-664
<b>General State Fund 2/</b>															
	156	609	973	539	504	504	504	504	504	504	574	574	574	574	574

1/ These figures do not include total revenues and expenditures of the related local jurisdictional budgets.

2/ General State Fund - monies generated from project and paid in to General State Fund. Such monies, available for redistribution throughout the State, have not been input to offset or enhance budgetary shortfalls or surpluses, respectively.

Source: WRG EIS Team



Forecast"). Total revenues shown are the sum of various taxes discussed previously. Capital costs are not included in this evaluation of current operating accounts.

The Start-Up Period: The first 12 quarters of the construction period and initial phase of operations of the mine/process plant are summed as annual totals on Table 3-64. The seven jurisdictional budget totals on current account show that in no budget accounts would project revenues meet or exceed the level of current expenditures. The total revenue shortfall in all seven budgets (unadjusted to reflect economies of scale, one-item budgets, etc.) combined, annually would be forecasted as follows 1/:

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Expenditures	\$ 518	\$ 5,062	\$ 4,634	\$ 3,199
Revenues	<u>311</u>	<u>1,401</u>	<u>2,381</u>	<u>1,813</u>
(Deficit)	(207)	(3,661)	(2,253)	(1,386)

The Long Term Period: (Year 5 - Year 15): The stabilized populations of the longer term would produce fixed tax revenues derived from property and sales taxes. However, operations of the corporation would continue to produce variable tax revenues resulting from annual and periodic changes in the levels of expenditure on supplies and equipment (State sales tax), a general rise in the level of property asset valuations, and in net proceeds valuations of mine/process plant output (ad valorem property tax).

Because of the disposition of the variable tax revenues collected from mine/process plant operations, only two of the seven local jurisdictional budgets would be influenced by incremental changes in tax revenues. These jurisdictions would be Eureka County and Eureka School District.



Table 3-65 shows that the accounts which sustain incrementally higher revenues due to mine/process plant operations would begin a reduction of the budgetary shortfalls during this period. The following summarizes Table 3-65. 1/

	<u>Year 4</u>	<u>Year 5</u>	<u>Year 10</u>	<u>Year 15</u>
Eureka County				
Expend.	\$1,250	\$1,250	\$1,250	\$1,250
Revenues	909	1,009	1,009	1,098
Eureka Schools				
Expend.	1,698	1,698	1,698	1,698
Revenues	871	1,138	1,138	1,212
Eureka Town				
Expend.	56	56	56	56
Revenues	1	2	2	2
Elko County				
Expend.	32	32	32	32
Revenues	7	7	7	7
Elko Schools				
Expend.	101	101	101	101
Revenues	11	10	10	10
Elko Town				
Expend.	50	50	50	50
Revenues	7	7	7	7
Carlin				
Expend.	3	3	3	3
Revenues	1	1	1	1

---

1/ These figures do not include total revenues and expenditures of the related local jurisdictional budgets.



In only the first two accounts revenue changes appear which tend toward a reduction in budgetary deficits in the net project accounts. The latter five budgets remain constant throughout the forecast period. On overall aggregate account, the seven unadjusted budgets combined would produce expenditures during year 15 amounting to \$3,190,000. Revenues, not including these monies retained in the General State Fund, would total \$2,337,000, resulting in a \$853,000 deficit if economies of scale, etc. did not apply.

The Period of Year 15-50: In the extended forecast for the period of year 15 through year 50, there would be no betterment of the net project-related accounts in any of the seven jurisdictional budgets. A slight worsening of the deficit is forecasted for the variable-revenue accounts of Eureka County and Eureka School District. This would derive from a decline of \$550,000 annually in mine/process plant expenditures on supplies and equipment during the period, from \$1,650,000 to \$1,100,000 annually, and an anticipated minor decline in net proceeds values of market production. The first affects the level of sales tax revenues and the second the value of ad valorem property tax revenues. (See Table 3-31).

These changes are shown on Table 3-66, for the variable-revenue accounts which reflect such changes. The amounts shown are in 5-year intervals, stated as annual average revenues.

#### 3.4.4.5 Budgetary Impacts of the Mt. Hope Project - Adjusted

Adjusted Budget Forecasts. As previously described in detail, an analytical survey of forecasted expenditures was conducted to assess the potential for, and likelihood of, economy of scale and real time budgeting within Eureka County and School District as a result of eventual proposed action consequence. The regression analysis conducted clearly indicated both the potential and extent of such real occurrence within Nevada and as such was relied upon in the final fiscal budget analysis to determine impact significance.

To illustrate the effect (and expected most probable case upon proposed action implementation) of the regression analysis results and subsequent budget impacts, Tables 3-67 and 3-68 are presented to detail budget



forecasts of revenues/expenditures for Eureka County and Eureka County School Districts. (Tables 3-67 and 3-68 are prepared in complement with Tables 3-58 and 3-59 which detail adjusted expenditure forecasts only).

Table 3-25 (reproduced hereafter for facilitating review as Table 3-69) the budgetary impact of expenditure adjustments to reflect both realistic economies of scale and direct cost budget items (e.g., direct teaching costs). The following details the impact variation from the invalid assumption of straight line per capita expenditure costing.

The Start-up Period: The total revenue shortfall in all seven budgets combined during the first four years would be as follows:

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Expenditures	1,156	2,743	2,004	1,972
Revenues	<u>311</u>	<u>1,402</u>	<u>2,381</u>	<u>1,813</u>
Surplus/(Deficit)	(845)	(1,341)	377	(159)

Contrary to the continued deficit expenditures of the Eureka County School District under the unadjusted basis, it would be anticipated that project revenues would exceed actual adjusted expenditures in year 3, continually exceeding such expenditures during the project period. Eureka County expenditures would similarly be exceeded by revenues received except that such would not occur until year 6. As the regression analysis could not encompass Elko County jurisdictions, nor the Town of Eureka, no variation has been recorded in the adjusted fiscal analysis presented on Table 3-69. As such, it remains anticipated that budget deficits would accrue in Elko jurisdictions relative to direct matching of project revenues and expenditures. Again the difference in revenues received would be contributory from state tax laws.

The Period of Year 5 to Year 50: In the net combined case of all seven jurisdictional budgets, the direct project revenue/expenditure balance would increase from a surplus of \$230,000 annually in year 5 to \$664,000 annually in year 15. The extended forecast of year 15 to year 50 would, as described



previously, result in a slight decline of revenues received but would not create a deficit match situation.

Note Regarding General State Fund Monies: As indicated on Table 3-69, the implementation of the proposed action would result in revenues being accrued to the General State Fund ranging from \$156,000 (year 1) to \$973,000 (year 3) annually with a stabilized revenue generation approximating \$574,000 annually, in excess of the combined budget surpluses of \$664,000. As detailed in Appendix A of this Technical Report (Appendix E of the EIS), historical review of the county budgets indicates eventual receipt of such monies in excess of that collected within the jurisdiction. While not distributed in the analysis, herein, such redistributed monies would effectively contribute to significant impact mitigation within both Elko and Eureka Counties.

#### 3.4.5 Attitudes and Lifestyles

##### 3.4.5.1 Summary

The potential for impacts upon the general attitudes and lifestyles of the Eureka County population as result of Case 5-A implementation was evaluated on the basis of two criteria: 1) rural lifestyle; and 2) attitudes as to "ambiance" of Eureka County, particularly the Town of Eureka, resulting from the cultural history (Technical Report No. 7) of the area.

The population influx of the Case 5-A subdivision scenario would directly affect the rural lifestyles of the existing Eureka County resident populations. Effects within Elko County were determined insignificant as a result of its rural/urban composition and larger population base which would effectively mask most, if not all, effects.

The rural lifestyle presently associated with the Eureka area would be affected primarily as a result of the expected population doubling, mostly with mining and mineral processing professionals and industrial labor (versus) ranchers, small businessmen, farmers). The different lifestyles of the in-migration population would be expected for the most part to present direct conflicts with the status quo. Although this conflict would diminish as pro-



ject term proceeded, a short-term effect throughout project duration would be expected.

The effects of the lifestyle conflicts upon the resident population would be both direct and indirect as well as beneficial and adverse. Direct impacts would affect the rural way of life through concentration of the population, increased traffic and congestion, increased service industries of a specific nature versus the rural county general store, etc. The extent of this rural "urbanization" would, however, be limited. The limited amount of land affected, the lack of significant impacts to agriculture or ranching, and the remoteness of the regional area would continue to strongly support a rural setting.

The primary impacts to local lifestyles are expected to be indirect impacts on resident attitudes and perceptions as project implementation proceeds. Extremely difficult to quantify is the perception that some residents will regard the implementation of Case 5-A as a permanent, negative change of status quo. Correspondingly, some residents would consider Case 5-A implementation highly favorable in terms of lifestyle change due to their perceptions that the area status quo is not complete and/or satisfactory in terms of health care, employment opportunities, etc.

Overall, the lifestyle changes incurred as a result of Case 5-A implementation would be perceived on an individual basis in highly variable degrees.

The potential for impacts upon the ambiance of Eureka County, especially the Town of Eureka, was primarily related to the historic and cultural value of the Town itself. The effects of Case 5-A were evaluated as to the potential for impacting the Town's Historic District designation (Section 3.9 of the EIS, Technical Report No. 7). The sources of direct influence upon the historic district criteria would be limited to physical obstruction or disturbance in the locale of downtown Eureka. The Case 5-A scenario was not determined to present definitive potential for such impact. The Case 5-A housing plans stipulate development of subdivision property in a single unit area that would be infeasible in the downtown area. Housing requirements not fulfilled



within the subdivision alone under the Case 5-A scenario were assumed to be addressed by dispersed housing located throughout the Diamond Valley, Kobeh Valley and Eureka Town perimeter areas. The construction of such housing would not be expected to create direct impacts upon the Historic District area.

#### 3.4.5.2 Review of Assessment Details

The socioeconomic data acquisition programs pertinent to the preparation of the Mt. Hope EIS (and by association this Technical Report) have emphasized the compilation of state and county published data with subsequent confirmation/update of the collected data by personal communication with Eureka County and Nevada State authorities. The use of qualitative data has been very limited in order that an unbiased approach to socioeconomic assessments be maintained.

The deemphasis of qualitative data acquisition has been exercised with particular care in the discipline of social attitudes and lifestyle, especially in the aspect of in-field canvassing of the Eureka Town and County inhabitants. This approach was defined early in the EIS process at the request of EXXON management. As stated in its project description and thereafter, in the EIS, EXXON considers the early phase of its planning and the probable extended delay in initiation of actual project activity to the late 1980's and possibly not until the early 1990's to represent a possible conflict with the natural desires of the in-place population to begin community and individual reactions in 1983 and thereafter (e.g., subdivision planning, land transactions, etc.). It has been the philosophy of EXXON that initiating extensive community and company interaction at this early stage of Mt. Hope activity would be premature and most likely would result in undesirable speculation leading to real estate and business actions (i.e., purchasing/selling subdivision lands). While EXXON management has interfaced with county officials and the Eureka County Planning Commission on a project definition basis, a decision was made not to conduct a comprehensive in-depth interview canvassing of the populace; again, considered to be premature in timing relative to actual probable dates of project initiation. Reliance upon the



detailed and extensive fiscal impact analysis was considered more appropriate for quantitative impact identification at this point in project development.

Thus, the manner of analysis utilized to assess project impacts upon social attitudes and lifestyles has entailed deductive, qualitative evaluation of scoping letters, personal conversations of the WRC EIS Team with some members of the community, review of the Eureka County General Plan goals/objectives relative to compatibility with the proposed action, and an overall reliance upon the professional experience of the EIS preparers.

Identifying the difficult scope of qualitative assessments, was generally performed by 1) a review of the concerns/issues brought forward during the EIS scoping process, and 2) use of the manual entitled "Guide to Social Assessment, Technical Briefing Report" (U.S.D.I., 1982). The summary previously presented reviews the qualitative assessment of project impacts relative to the primary issues expressed during the EIS scoping process. The following details, to the greatest extent possible within the confines of the qualitative data base available, the assessment of sociological questions considered relevant to the proposed action and as outlined in the Guide to Social Assessment.

Introduction. The Mt. Hope project would be characterized as an economic/resource management project that individually would primarily cause social effects by changing the economic, demographic, and facilities/services characteristics of the in-place communities. As such, a heavy emphasis on economic (see Fiscal Impact, Section 3.4.4), demographic and facilities/services characteristics is appropriate for evaluating several aspects of organizational and regulatory context and public health and safety; two additional factors affecting the change in social structure.

The primary factors of social change identified for the proposed action are population influx (a doubling of county population) and financial (revenues/expenditures generated equivalent to total existing budgets).

The major community resources that can be considered for impact assessment include the following:



- 1) Previous experience of the community with development.
- 2) Cultural characteristics, particularly the presence of unique populations such as American Indians, land grant Hispanics, or communities with a strong religious base, such as Mennonites or Mormons.
- 3) Population size and demographic structure.
- 4) Occupational and labor force characteristics, with particular attention to the dominance of particular livelihoods and/or technologies.
- 5) Employment and income characteristics of the community.
- 6) Existing (or planned) facilities and services and fiscal resources.
- 7) Institutions and organizations, and the regulatory structure of the community.

Preceding sections of this Technical Report have characterized the baseline factors of the above community resources. The following text serves as an overview of the capability of the communities affected, most particularly Eureka Town, to adapt to the changes brought forward by implementation of the proposed action. As necessary, salient factors of baseline characterization not previously discussed are presented to assist in the review.

Historical Experience. As noted in the Guide to Social Assessment:

"An understanding of the community's history is needed to understand the context in which community residents will perceive a proposed action. The historical review should focus on determining social attitudes, understanding the social structure of the community, and predicting how the community may respond to project inputs. Of particular importance is past experience with 1) similar projects, 2) other related types of development, or 3) community emergencies and disasters. A community that has experienced previous projects or other situations that required coordinated response may be far more effective in adapting to change. On the other hand, if the previous experience was



bad, it may signal strong resistance and fear of change. In addition, community residents, having experienced growth, may have developed strong attitudes regarding these issues".

As reviewed in the baseline characterizations of Eureka County history and population, Eureka County has experienced, perhaps more than any other county in the state, dramatic fluctuations in population and overall living conditions as a result of mining industry developments. The County's cultural tradition and mere existence is directly tied to the historical development of mining projects with Eureka Town perhaps being most representative of the historical mining-dependent background. Perhaps the best summation of Eureka attitudes to date can be represented by the lead-in to an August 14, 1983 Reno Gazette Journal article concerning the town inhabitants' views relative to the potential for Mt. Hope development. It read "Eureka: Residents Love It Despite Boom or Bust Industry" (Manning, H., 1983).

Although a broad generalization, the quotation above seems to apparently represent the underlying current theme of community pride and thought; specifically, that regardless of the continuity or magnitude of industrial influence, the peoples of Eureka have managed to adapt and survive in a manner acceptable, if not wholly desirable. It should be noted that an additional perception of the EIS team was that, in some respects, two primary groups within Eureka, Diamond Valley ranchers/farmers and Eureka Town business people, may be somewhat at odds concerning the degree to which an open-arms attitude should be extended to incoming industry. However, an underlying continuity of thought is apparently present which, in the judgement of the EIS team, would serve to beneficially unite the community in a policy of coordinated adaption. Specifically, the uniting thought appears to be that, regardless of individual opposition or approval, if the project is indeed going to be developed it must be done in a manner assuring appropriate interaction with the existing community.

Thus, several existing conditions within the community can be assessed specifically with a view to historical precedent and the community's desires for future development.



- 1) Historical Adaptability: The Town of Eureka, a National Historic District due to its preservation of buildings erected during the last century mining boom days, is considered unique and of special value (both culturally and economically as a tourist attraction) to the in-place residents. This in-place attitude regarding the town's values has resulted in an expressed concern that, while not wishing to preclude in-town residential or commercial development, such development must be conducted in a manner appropriately assuring preservation of the town's ambiance and integrity as an Historic District.
  
- 2) Historical Response. Past developments in mining, have, to some extent, resulted in a random method of residential/commercial establishment. The potential for implementation of the proposed action has resulted in the continuation, and perhaps an elevation in the sense of urgency, of a local debate regarding the need for, and type of, land zoning ordinances. On the basis of discussions with community members, particularly the county commissioners, it seems apparent that while the general community does not wish zoning ordinances there may be a reluctant affirmation of the need for such should the proposed action be implemented. Thus, it would seem that one impact of the Mt. Hope project would be not the origin of land use zoning but the forcing issue of zoning implementation, a reluctant measure in the minds of the majority populace.

### Cultural Character

Relative to social impact assessment, detailed analyses of cultural characteristics is likely to be significant only when there are unique racial, ethnic, religious, or occupational characteristics in the community. Examples of uniqueness include the following: large American Indian population; communities in which a single religious group was responsible for town establishment; Hispanic populations from Spanish land grants; and, communities in which a unique trade or occupation has been dominant. (U.S.D.I., 1982).



The Eureka County population characteristics regarding religion and ethnicity are highly diverse, and largely resultant of its establishment by mining related workforces. The town prides itself on the large number of cemeteries that are generally ethnic in type. Church activity is apparently as diverse. Occupationally, the area characteristics nearly epitomize the rural west, i.e., ranchers and farmers with independent small retail businesses servicing basic support demands.

The significant role of government employment appears contrary to the generally rural west character of the area, but has apparently been established in a manner indeed allowing self sufficiency and locally aware government.

In total, the broad cultural background of the resident population, originally founded by mining peoples, would be considered amenable to the adaptations, if any, required by implementation of the proposed action. While the geographic origin and cultural backgrounds of the immigrating project personnel can only be speculated, all probability exists that the employment requirements of mining experience would be translated into an incoming populace with similar appreciation of the rural west, either of an in-born origin or an adopted nature by choice. While experience has indicated that some cultural expansion has been brought forth by incoming populations in the arena of modern day cultural activity (opera, theatre, art exhibits, etc.), such activity would also apparently seem to be desirable in terms of fulfilling a need for such in Eureka County.

#### Population/Demographics

Historical and recent population/demographic characteristics of Eureka County and Eureka Town have been identified elsewhere in this Technical Report and other Technical Reports.

Aside from an increase in total numbers and age distribution, the proposed action would cause no significant change in county demographics. Eureka town would continue to be the primary seat of population and county



management. On a regional basis, Eureka would continue its position relative to Elko County and Ely City population centers.

From 1970 to 1980, the median age in Eureka County remained generally constant: 30.5 years in 1970 to 30.1 years of age in 1980. The age group of 18-64 increased 4.5 percent from 1970 to 1980, representing 63.5 percent of the county population. A marginal increase during the same period in the age group of 65 or over resulted in a county age distribution of 6.7 percent in 1980. Children under the age of 18 represented 29.8 percent of the county population. The proposed action would result in the immigration of populace generally within the age grouping of 18 to 64. Percent distribution of children has been assumed to be standard (22.5 percent). It has also been assumed that the majority of immigrating workforce would predominantly range in age from 20-45 with some evidence of the age groups 18-20 and 45-64 (i.e., laborer and upper management work tasks). The long-term influence of the age distribution described above would not appear to be significant. While median age within the county may shift upward by perhaps 10% (33-34 years), significant variation would not be expected except in the age distribution percent of 65 or more. Presently at 6 to 7 percent, the more than doubling of population (1775 stable) would result in a probable halving of that age group's percent contribution (e.g., 3 to 3.5 percent population composition). Relative to "senior citizen" community attitudes and available services, most impact would appear to be beneficial. As noted in previous sections, the population increase would be accompanied by more medical, social and recreational activities, important to the age group of 65 or over. While the increase in "crowds" might be perceived negatively by the same group, overall access to the community would not be diminished and may be enhanced.

Occupation/Employment/Income Characteristics. The employment potential of the proposed action, and the effects thereafter, represents perhaps the most singularly significant factor in the social impacts anticipated within Eureka County. The sheer magnitude of change represents a causative force of change, both highly beneficial and adverse in character.



Relative to direct monetary and living standard conditions, the implementation of the proposed action would be considered a significantly beneficial action. While worldwide economics will always affect the continuity of industrial activity, mining or any other industry, the potential for continuity maintenance will also be defined in large part by the potential for opportunity - i.e., the magnitude, in this case, to which a resource exists and which it can sustain activity. As indicated by the anticipated 50-plus year activity period, the Mt. Hope activity varies significantly from short-term mining venture activities of a lesser magnitude. As presented in Section 3.4.4 of this Technical Report, the Mt. Hope project would contribute in excess of 1.2 million dollars annually of net tax revenue gain alone. As further presented in Section 3.4.4, the impacts of economic influx would be dramatic, significantly increasing the potential for per capita gains and lowering of unemployment.

Similarly evident is the burden to which the employment requirements of the project could place upon the existing available labor force. In the short-term period, significant in-migration of qualified labor is anticipated, as is the complete absorption of available in-place qualified/semi-qualified workforce.

The absorption of the available workforce would result in certain aggravation of local business requiring either 1) the availability of that workforce at peak or special period (e.g., part-time labor replacement of full-time vacation time, tourist peaks, rodeo time, etc.) and 2) the availability of that workforce to indirectly allow maintenance of the company's on-board personnel (i.e., less turnover as available labor force is largely acquired first by new employers). The experience of the preparers indicates that perhaps the most significant factor in community unease with a new large employer is the loss of in-place employees to the competitively more resourceful new employer (or in the case of agricultural/ranching interest, the distraction that higher payroll offers younger family members to transfer their career interests away from farming/ranching). The inability to consistently compete in terms of wage levels, benefits, etc. can significantly affect the eventual longevity/success of a small, in-place business. In some cases, the economic benefits derived from the incoming population can be effectively managed to



allow/justify direct market place competition for available workforce. In other cases, employee loyalty may be the only decisive factor in retaining qualified and experienced personnel. While during the short-term period of project activity, extensive immigration of immediately qualified personnel would reduce the extent to which the in-place but unqualified county workforce would be "extracted" from existing businesses and family endeavors. The long term nature of the project would, however, tend toward such extraction as, in years 5-10, the in-place workforce would strive to become qualified and employed. In this regard, the proposed action represents an ironic dilemma in benefits/detriments normally associated with the mining industry. Specifically, while providing beneficial long term employment opportunities, financial independence and a future of career development, the 50 plus year period of activity negates the indirect effect that short-life mining ventures (5-10 years ore development) provide by allowing "temporary" employment and then an eventual return to originating industries such as agriculture and small business.

Relative to income characteristics, the proposed action would represent, in conservative terms, an economic boon to an area presently under the significant adversity of recession. The proposed action would represent primarily a secondary income generator (versus primary via payroll to in-place residents). Section 3.4.4 details the anticipated levels of per capita expenditure associated with the project and generated employment populations. Indeed, the principal efforts of the community would be structured to secure such income in a manner fulfilling the incoming populations needs such that new competition (e.g., chain supermarkets) would be inhibited from intrusion. In terms of social attitude, it has been the observation of the EIS team that the in-place residents of Eureka most significantly appreciate the long-term opportunities (versus short-term) for sustained economic growth that the 50 year plus Mt. Hope project life represents.

Facilities/Services and Fiscal Resources. Details concerning the proposed action's quantitative impacts upon the facilities/services and fiscal resources of the affected communities are presented elsewhere in this Technical Report. Regarding social attitudes and lifestyles, the proposed action implementation



would represent a focus of significant challenge, opportunity and dilemma for the population of Eureka County and Eureka Town.

As indicated in other text discussion, service availability is limited in the project area. While not restricted to the extent that significant adversity is reached, there appears to be a predominant attitude that the community would certainly benefit from an expansion of its existing base. Financially, however, such expansion can only be initiated in a gradual step-wise manner, and that many projects can not be initiated at all due to the low population support base.

The significance of the proposed action lies in addressing both of the limiting factors above in a beneficial manner. First, the financial effects of the project would allow a significant fiscal resource base from which community leadership could derive large sums of monetary support. Second, the increased population, as documented in Section 3.4.6, would more than adequately support in demand terms the types of services/facilities expansions envisioned. It has seemed apparent, however, that the anticipated activity would not require extensive changes in the organizational or community influence controls presently existing, although the community's planning groups would undergo extensive activity requiring patient and persistent dedication. Such effort appears to be desirable by the participants, at least as indicated by past CRMP interest in the project. Additionally, the long term nature of the proposed action would be anticipated to direct more confidence on the part of fiscal lending institutions to provide the necessary capital and financial backing to new business ventures, both directed from in-place residents and incoming personnel.

One particular aspect of the major change in demand, as represented by the increased project population, that may be adverse to the community relates to the probable cost of living increases that would undoubtedly accompany the economic growth of the area. As noted in Sections 2.6 and 3.4.3, housing demand within the area would be significantly increased, with the existing base of housing availability generally considered poor. As the economic influx of the proposed action began to affect the in-place residents, it would be anticipated that the employment security and financial rewards



brought about by the project would spur in-place residents to seek upgraded housing. This activity would be in addition to the housing required by the immigrating population. Understandably, the cost of real estate and housing would be anticipated to be magnified beyond that at present, thereby potentially precluding the acquisition of housing by community members not financially benefited directly by the project (e.g., fixed income recipients). The resultant efforts of such cost of living increases would present a significant challenge in immigration to local authorities, more so than to state or federal agencies. Again, it must be assumed that without attaining successful access to the monies generated by the project as State General Funds, the impact of such cost of living increases (e.g., also food, medical, etc.) would be significant and could affect perhaps five to ten percent of the population based on historical financial assistance records.

As indicated in Section 3.4.3, the expansion of services/facilities is anticipated to be generic in type. Specifically caused by the low availability of services at present, it is less likely that services expansion would be directed in a manner (e.g., practicing pediatrician versus general practitioner). While the proposed action would equate to a more than doubling of the current resident population, the affected area would remain rural in nature and the associated type of lifestyle would be anticipated to remain intact.

Institutions/Organizations/Regulatory Structure. As noted in previous sections of this Technical Report, three primary employment groups exist within Eureka County: mining, government and ranching/agriculture. Implementation of the proposed action would significantly magnify the degree to which the mining industry presently dominates the economic influence character of the county. This magnification of economic influence could be negatively perceived within the current political organizations of the county and town. Rightly or wrongly, political decisions with an entity of any size (e.g., city, county, state) are frequently determined on the basis of economic influence, either the economic influence of individuals or industrial entities. Based solely on discussions with long-term Nevada residents of various occupations (e.g., sociologists, county commissioners, small business owners), the extent to which political decisions are made on the basis of economic influence in the area appears to be altered somewhat on the historical basis of employment



origin in the state. Specifically, the ranching and agricultural employment sector has been effective and active in organizing and maintaining its influence, historically originated, within the state and local governing entities. Thus, it would seem that the secondary impact of political influence caused by economic dominance would be tempered in the area by a dedicated organizational effort on the part of local ranchers/farmers. The long term of project activity (plus 50 years) however, would on a worst-case basis of individual perception in the ranching/agricultural sector, would be considered a causative factor in an eventual influence shift toward further mining influence and thereby, a potentially significant adverse impact relative to the local representation of ranching/agricultural interests.

#### 3.4.6 Community Facilities and Services

##### 3.4.6.1 Summary

Schools. Normal school population growth has been projected on Table 3-70. Table 3-70 additionally includes notes on the derivation of per capita school rates for Elko and Eureka counties. Population projections for Case 5-A, proposed action subdivision, indicate that an additional 326 students would require schooling at the point of project impact stabilization (3.75 years for school population). Distribution of the students has been estimated as shown in Tables 3-71 (Quarterly) and 3-72 (Annual). The number of classrooms anticipated to accommodate the additional student body is also shown on Table 3-72. Classroom requirements were determined on a worst-case basis, i.e., it was assumed that no capacity was available in the existing schools. Although this is not presently the case (Chapter 2.0), the assumption was deemed appropriate for full review of potential impact in the event that at the time of project implementation such a full capacity situation had occurred.

Implementation of the proposed action (Case 5-A, subdivision) would result in a doubling of the present Eureka Town classroom facility requirements and more than a doubling of present school enrollment.

Beneficial impacts would result as the school base enrollment achieved a level adequate to facilitate teacher recruitment (presently a



Mt. Hope Molybdenum Project

Table 3-70 School Age Children: Normal Populations (Without Project)  
Quarterly First Four Years

	Year 1 1984		Year 2 1985				Year 3 1986				Year 4 1987	
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
County:												
Eureka	227	228	240	252	263	275	278	282	284	297	290	293
Elko	4,332	4,371	4,420	4,447	4,485	4,524	4,562	4,601	4,639	4,678	4,717	4,757



Mt. Hope Molybdenum Project  
Table 3-71 School Age Children: E.M.C. and Generated Workers - Quarterly First Four Years

3-162

	4	8	11	13	15	16	14	13	13	13
Case 5-A Eureka County	0									
Elko County	0	1	2	2	2	2	2	2	2	2
Case 5-B Eureka County	0	7	9	10	11	12	10	9	9	9
Elko County	0	2	4	5	6	6	6	6	6	6

Source: WRC EIS Team.



Mt. Hope Molybdenum Project

Table 3-72 School Age Children and Classrooms Year End Totals

	Year 1	Year 2	Year 3	Year 4
Subdivision				
<u>5-A Case</u>				
Eureka Town	78	321	289	287
Elko	5	39	34	35
Carlin	0	2	2	1
Classrooms				
Eureka Co.	4	15	13	13
Elko Co.	0	2	2	2
Decentralized Workforce				
<u>Case 5-B</u>				
Eureka Town	64	256	206	204
Elko	15	87	96	99
Carlin	3	18	23	23
Classrooms				
Eureka Co.	3	12	10	10
Elko Co.	1	4	5	5

Source: WRC EIS Team.



major problem) and enhance extracurricular programs. Primary impacts determined to be detrimental would involve a significant and adverse lack of classroom space. The classroom numbers associated with the student influx are based on a 22 pupil-per-classroom ratio. While student/classroom ratios could be increased and probably would be in the short term, additional facilities would be required to alleviate classroom shortage. Student distribution would be anticipated to be equally divided between the two schools of Eureka (K-6 and junior/senior high school) which would lessen impact level but would require facility expansion at both locations.

As discussed in Chapter 3.0, the financial capabilities of the Eureka School District (as measured by bonding capacity) appear adequate to accomodate the necessary facility expansion costs. Expansion costs for the Case 5-A scenario have been estimated on a preliminary basis to approximate \$2.4 million (\$8,400 per student capital construction, 288 students) or 23 percent of the 1983 district bonding capacity of approximately \$10.3 million.

Expenditure levels of the school district, assuming status quo of the per capita student costs, would be adversely affected due to increased staffing requirements, facility maintenance, etc. Based on a teacher/student ratio of 1:14, approximately 23 teachers would be required to accommodate the gross total student influx of Case 5-A. Present staffing levels are, however, equal to a teacher/student ratio of 1:9.4, and if elevated to 1:14 would result in a required teaching staff addition of 17. While housing provisions for such a staffing increase would not presently be available, the homebuilder/mobile home dealer industry response anticipated to occur (Section 4.11.1.3) would mitigate the problem in the long term (+4 year period). Short-term housing would probably be addressed in a manner similar to that presently occurring (e.g., mobile home supply maintained by school district).

As indicated in Tables 3-71 and 3-72, Elko County schools would be insignificantly affected as only an additional 67 students would be expected, equalling a two percent enrollment increase.

The fiscal impact of the Eureka and Elko County, enrollment increases is discussed in Section 3.4.4.



Health. Health care services within the Eureka Town area would be directly affected by implementation of the proposed action Case 5-A. The impacts associated with the provision of health care services (federal, state, county and volunteer) are expected to progress from being generally negative during the early period of construction (1 to 2 years) to being beneficial during the period of late construction through operation.

The primary influence of implementing the Case 5-A subdivision scenario upon health care services would entail centralization of a population large enough to require well developed health care services. As noted in Chapter 2.0, health care service in Eureka County is limited by low population characteristics. Medical and dental professionals are heavily reliant upon external funding and community demographics do not provide a self-supportive establishment of health care services beyond non-hospital medical and emergency requirements.

The population projections associated with implementation of the Case 5-A scenario would theoretically provide a self-sustaining basis of support for approximately three to four doctors (1.5 doctors/1,000 population), 12 to 14 nurses (4.5 nurses/1,000 population), one or two dentists and one medical health specialist (HDR, 1980). The expanded capability would be a significant beneficial impact to the Eureka County population that presently must go to Elko for most non-basic medical and nearly all dental services. It is expected that the existing health clinic facility would require expansion although this impact would be partly, if not entirely, offset by the location.

Negative impacts associated with the Case 5-A scenario, primarily incurred during the first two years of implementation of the proposed action, may be found in a shortage of health care professionals and in the overall quality of services provided. Additional staffing would probably require supplemental hiring or personnel reassignments by the Nevada Rural Health Consortium until such time that the private professional sector responded to the generated demand. Patient access and service priorities would be altered to accommodate demand. While potentially significant in the short term, the negative health care impacts are considered insignificant.



Elko County health care services are not expected to experience any significant impact. Hospital capabilities are extensive relative to the area.

Law Enforcement. Both the county sheriff's department and county court system of Eureka would be directly affected by the increased populations described in Case 5-A. Elko County law enforcement agencies would be affected only to a minor extent. Associated impacts are primarily of an indirect nature (e.g., increased number of patrol vehicles required) versus direct impacts associated with long-term crime levels.

In Eureka County, the Case 5-A population increase of 1,571 (stable annual) would require the addition of an estimated six officers, six administrative/support personnel and three patrol cars. The rapid population growth associated with the construction period would require a rapid fulfillment of the estimated requirements. Although not quantified in detail, it is expected that jail facilities which are presently located in the County Court house would require either expansion or the establishment of a separate facility. Due to the historic value of the County Court House, it is doubtful that physical alterations to the building would be desirable and it is assumed that a new facility would be constructed.

Indirect impacts of project population influx include a probable need to rapidly train new-hire law enforcement personnel, a management system restructure to allow facilitated response and a potential need to expand the present judicial process capacity.

Additional workload upon the existing law enforcement system may be anticipated to rise generally in proportion to the population increase. The short-term construction period may be accompanied by a higher frequency of misdemeanor occurrences. This impact is not expected to pose a direct significant effect.

No long term Elko County law enforcement requirements were determined on the basis of Case 5-A impacts.



Fire Protection. No significant impacts to fire protection services were identified as a result of Case 5-A implementation. The Case 5-A subdivision plans call for provision of a fire truck vehicle and housing/support facility. The plans additionally assume that, if not in emergency response, the equipment and support personnel would be available for use outside the subdivision community. Some upgrading and/or addition to the presently available fire protection equipment (e.g., intermediate sized support service truck) would probably be desirable but was not deemed significant.

The impact analysis has assumed that fire prevention and control at the mine operation would be EXXON provided or negotiated with EXXON and contracted party.

Public Utilities and Communications. No direct impacts of adverse significance were identified relative to project and population demands upon electrical, gas, telephone or general communication systems. Firms presently or potentially responsible for providing such system services indicated that existing or planned (directly or indirectly induced) capacities would be adequate to accommodate the projected demand. Upgrading and/or expansion would be expected as the need developed. Direct and indirect effects of the additional demand on existing capacity are difficult to accurately quantify but have been analyzed as possible within the fiscal impact analysis.

The existing and proposed power supply system available to Mt. Wheeler Power Company has been planned independently and without consideration of the proposed action. Mt. Wheeler Power, in its environmental impact report has stated that the estimated capacity of the Mt. Hope action will not exceed planned power supply (Appendix 9-B). (Appendix 9-B of the EIS presents details of the Environmental Impact Report prepared by Mt. Wheeler Power Company concerning provision of electrical services).

Water and Wastewater. Presently, the water supply and distribution system within the Town of Eureka is variable in capacity and quality. Present capacity is considered excellent as a result of recent well-developments. The water distribution system, presently undergoing partial improvement, is generally adequate although peak load capabilities are limited in some instances.



Under Case 5-A circumstances, no significant adverse impacts were identified. New community plans call for the development and provision of major water supply/distribution facilities (e.g., wells and pump station, storage, distribution). Impacts associated with the requirements of generated populations and Mt. Hope employees not living in the subdivision were evaluated in terms of fiscal budget expenditure. The data and results are incorporated into the analysis of Section 3.4.4. In summary, no impacts of significance were identified for either the water or wastewater systems. Wastewater treatment capacity within the lagoon system was determined adequate for the probable portion of residents requiring such services.

Solid Waste. No impacts of significance were identified relative to availability or adequacy of the solid waste management system and implementation of Case 5-A. Complete review of fiscal impact, minor in extent, is presented in Section 3.4.4.

Community Facilities. Most, if not all, of the available community facilities in the vicinity of Eureka Town would experience increased visitation and/or use if the proposed action subdivision was implemented. Additional social organizations (e.g., churches, social clubs, etc.) may be expected to develop in response to demand although the existing activities/facilities may well be adequate for and actually benefit from increased patronage.

No community facilities were considered to be significantly impacted in a direct manner although indirect effects (e.g., displeasure with crowding of county pool) were identified in variable degrees.

### 3.5 Alternatives

Alternate 5-B, the Decentralized Workforce, assumes that the Mt. Hope operational workforce would be decentralized, i.e. no subdivision would be developed as a planned project component of EXXON. The alternative also assumes that personnel distribution by county would be variable from that anticipated by the proposed action, with a larger percentage of people locating in Elko County.



As detailed in the following sections, the variable distribution of personnel would directly impact the socioeconomic conditions of housing, employment, and fiscal management in a different manner than that described under the proposed action.

#### 3.5.1 Employment

Employment impact under the alternative Case 5-B would be identical to that described for the proposed action, Section 3.4. Peak construction employment would total 940 workers; operational employment would total 640 persons. Combined peak employment would reach 1,410 with a total peak population increase of 2,642. The peak of construction and operational workforce overlap would occur during the seventh quarter of the start-up period.

#### 3.5.2 Population Impact

##### 3.5.2.1 Summary

Under the alternative Case 5-B, it is anticipated that a higher percentage of population residency would occur in the Elko City and Carlin areas. In the Case 5-B alternative, 67 percent (355) of the non-local operations employees are expected to select Eureka as residence; 33 percent (versus two percent in Case 5-A) would choose Elko or Carlin (170). This analysis was based on commuting distance. Table 3-11 depicts the expected distribution of these employees. Figure 3-2 illustrates the peak differential in population increase created by implementation of Case 5-B versus Case 5-A.

The distribution of population is, as under the conditions of Case 5-A, expected to significantly impact the Town of Eureka. Additionally, the population increases in the Elko jurisdictions significantly vary the financial impacts to each jurisdiction (Sections 3.4.4 and 3.5.4).

Under alternative Case 5-B, the peak project population period (7th quarter) would result in an increase from approximately 615 to 2,650 persons in the Eureka Town area. Operational population increases would total 1,108 versus 1,572 (Proposed Action) in Eureka and 537 versus 195 (Proposed Action)



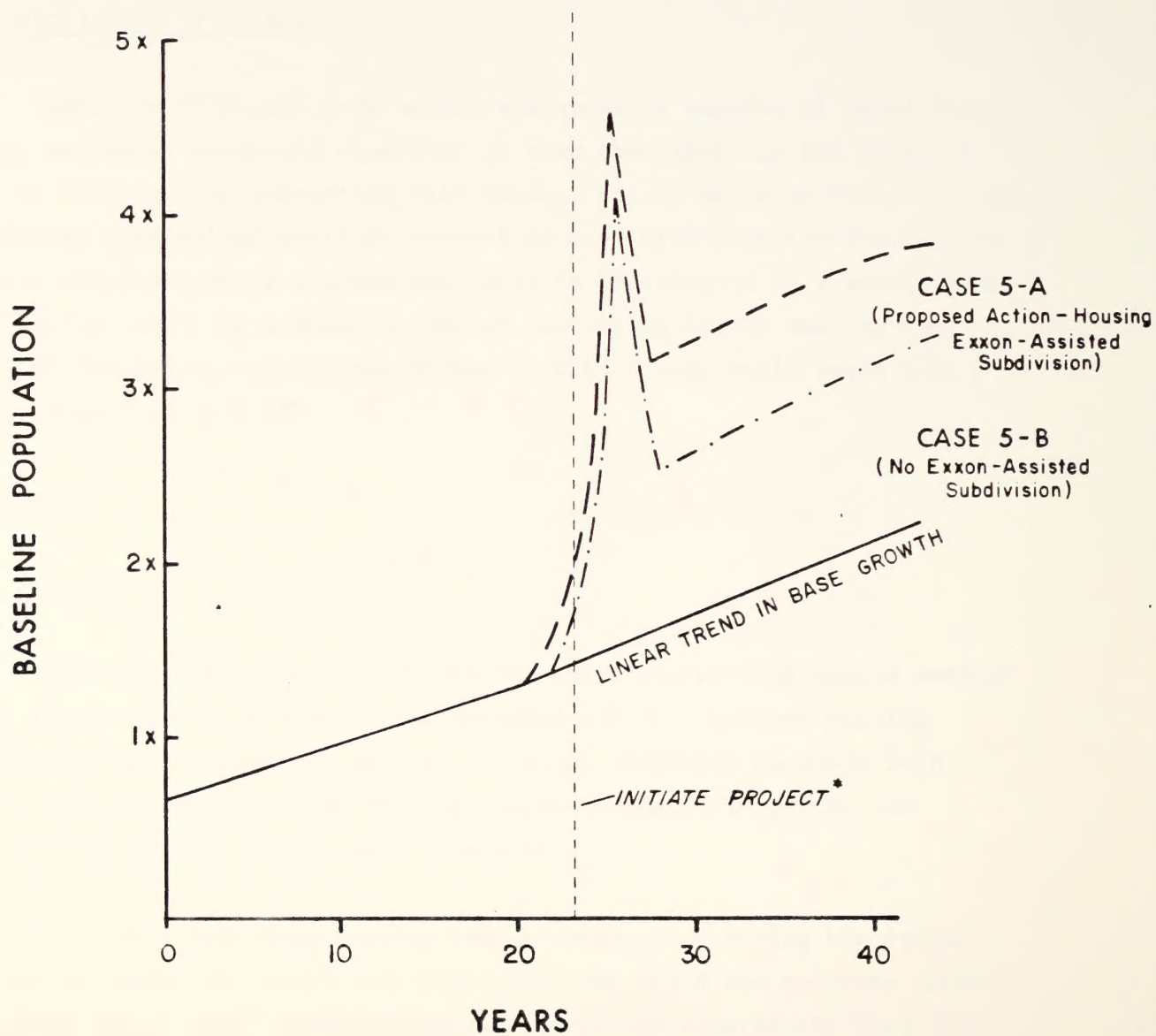


FIG. 3-2.  
HISTORIC AND PROJECTED POPULATION GROWTH  
IN EUREKA COUNTY

\* Initiate project line arbitrarily set at midscale to demonstrate effect.



in Elko (Table 3-11). Carlin would undergo a population increase of 130 from its 1980 population of 1,232, a change of 10.5 percent. The population change in Carlin would reverse the negative trend from 1970 to 1980 (a 6.2 percent decline). Population increases within the Elko City area would generally be insignificant in terms of total population (an addition of 537 persons to the 1981 population of 9,693).

#### 3.5.2.2 Population Calculations

Tables 3-73 through 3-76 detail the specific results of population dispersion estimates conducted similarly to that described for the proposed action. As indicated by comparison with Table 3-15, by midpoint Year 4 Eureka County project populations would be reduced by one-third (500 individuals) as Elko County amenities would attract employees in the absence of a subdivision. The shift effect would be a dramatic change for Eureka County whereas the project contribution in percent population to Elko County would raise only minimally (from 0.4% to 3.5%).

#### 3.5.3 Housing

##### 3.5.3.1 Summary

Tables 3-19 through 3-23 detail the total new housing demand anticipated for alternative Case 5-B and the proposed action. Assumed housing characteristics are outlined in Section 3.4.4 and presented in Table 3-20. Table 3-77 details the total new housing demand by quarterly period and presents calculated ad valorem taxes generated.

As in Case 5-A, peak housing demand would occur during the second year of project start-up (first full year, year one being two quarters only). Total housing demand would equal 614 units. Under the alternative Case 5-B scenario, a total of 368 housing units would be added to the Eureka County stock. Percent distribution of type would be affected as follows: single family units - 39.7 to 33.4 percent; multiple family units - 25.1 to 27.9 percent; and, mobile home units - 35.2 to 38.7 percent. Percent change of type distribution in Elko County should be miniscule. Total addition to the



Table 3-73 Locational Distribution of Manpower By Quarter: Direct Project Personnel (Excludes Local Hire)

1/ Omits local hires (115).

3-172



Mt. Hope Molybdenum Project

Table 3-74 Locational Distribution of Generated Employment X Quarter X Alternative Case

	Year 1				Year 2				Year 3				Year 4				
	3Q		4Q		1Q		2Q		3Q		4Q		1Q		2Q		3Q
<u>Dispersed Personnel Case</u>																	
1) Eureka Town Area																	
Single	0	4	11	18	22	26	28	28	24	22	22	22	22	22	22	22	22
Married	0	15	44	73	91	103	114	114	96	84	89	89	89	90	88	88	88
H.Holds	0	12	34	56	70	79	89	88	73	64	67	67	67	69	67	67	67
Popul.	0	30	90	152	197	229	259	264	233	219	236	236	236	238	234	234	234
School	0	8	24	40	49	56	61	61	51	45	46	46	46	48	47	47	47
2) Elko																	
Single	0	3	11	18	22	25	28	28	23	21	21	21	21	22	21	21	21
Married	0	15	44	72	89	101	112	112	95	83	87	87	87	88	86	86	86
H.Holds	0	12	33	55	69	78	87	85	71	63	67	67	67	67	66	66	66
Popul.	0	29	88	151	194	226	256	261	230	215	230	230	230	235	231	231	231
School	0	8	23	39	48	54	60	60	50	44	46	46	46	47	46	46	46
3) Carlin																	
Single	0	0	1	2	3	3	3	3	3	2	3	3	3	3	3	3	3
Married	0	2	5	9	11	12	13	13	11	10	10	10	10	10	10	10	10
H.Holds	0	1	4	7	8	9	10	10	9	8	8	8	8	8	8	8	8
Popul.	0	3	10	18	23	27	31	31	27	26	26	26	26	28	28	28	28
School	0	1	3	4	6	6	7	7	6	5	5	5	5	5	5	5	5

Source: WRC EIS Team.



Mt. Hope Molybdenum Project

Table 3-75 Forecast Project Populations and Characteristics: Direct-Hire and Generated Dispersed Personnel Case  
(Constant Workforce) Local Hires Excluded

Year 4, 3Q	Direct Hire	Gener-ated	Total	House holds	Population	School	Sales Taxes 1/		
							1987-2030	Eureka	Elko
1) Eureka Town Area									
Single	66	22	88	359	<u>1,036</u>	190	69,360	69,360	49,470
Married	266	88	354						
H.Holds	204	67	271						
Popul.	714	234	948						
School	143	47	190						
2) Elko				211	<u>609</u>	111	40,770		
Single	31	21	52						
Married	121	86	207						
H.Holds	93	66	159						
Popul.	326	231	557						
School	65	46	111						
3) Carlin				45	<u>130</u>	23	8,700		
Single	8	3	11						
Married	33	10	43						
H.Holds	26	8	34						
Popul.	91	28	119						
School	18	5	23						
<u>Total</u>	1,236	539		<u>615</u>	<u>1,775</u>	<u>324</u>	118,836		
1/ \$66.95 per capita									



Mt. Hope Molybdenum Project

Table 3-76 Population Effects on Communities of E.M.C. and Generated Populations, Dispersed Personnel Case, by Quarter

	Year 1			Year 2			Year 3			Year 4	
	3Q	4Q		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
<u>Eureka County</u>											
1) Eureka Town (Normal)	598	600	603	605	607	609	615	622	628	635	641
Project	104	858	1,765	2,221	2,380	2,543	2,593	2,101	1,402	1,114	1,060
Total	702	1,458	2,368	2,826	2,987	3,152	3,208	2,723	2,030	1,749	1,701
2) County Balance	598	600	660	720	780	872	851	860	869	878	887
3) County Total (Normal)	1,196	1,200	1,263	1,325	1,387	1,451	1,466	1,482	1,497	1,513	1,528
Project Total	104	858	1,765	2,221	2,380	2,543	2,593	2,101	1,402	1,114	1,060
<u>Elko County</u>											
1) Elko (Normal)	9,914	9,999	10,084	10,169	10,254	10,339	10,427	10,515	10,603	10,693	10,781
Project	7	73	198	316	413	462	547	568	583	593	605
Total											
2) Carlin (Normal)	1,281	1,285	1,289	1,294	1,297	1,300	1,302	1,305	1,307	1,310	1,312
Project	2	14	38	60	80	97	107	111	121	127	128
Total											
3) County Balance (Normal)	8,259	8,342	8,425	8,508	8,591	8,674	8,757	8,840	8,923	9,005	9,088
4) County Total (Normal)	19,454	19,626	19,848	19,971	20,142	20,313	20,486	20,660	20,833	21,008	21,181
Project Total	9	87	236	376	493	559	653	679	704	720	733



Mt. Hope Molybdenum Project

Table 3-76 Population Effects on Communities of E.M.C. and Generated Populations, Dispersed Personnel Case, by Quarter (continued)

	Year 4		Year 5				Year 6				Year 7	
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Eureka County												
1) Eureka Town (Norm.)	660	670	675	680	685	690	692	695	697	700	702	705
Project	106	860	1,773	2,223	2,383	2,511	2,591	2,101	1,402	1,114	1,066	1,040
Total	766	1,530	2,448	2,903	3,068	3,201	3,283	2,796	2,099	1,814	1,768	1,745
2) County Balance (Norm.)	660	670	675	680	685	690	692	695	697	700	702	705
3) County Total	1,426	2,200	3,123	3,583	3,753	3,891	3,975	3,481	2,796	2,514	2,470	2,450
Project Total	106	860	1,773	2,223	2,383	2,511	2,591	2,101	1,402	1,114	1,066	1,040
Elko County												
1) Elko (Norm.)	10,262	10,320	10,377	10,435	10,492	10,550	10,610	10,670	10,730	10,790	10,850	10,910
Project	7	73	199	316	413	456	546	568	583	593	608	617
Total	10,269	10,393	10,576	10,751	10,905	11,006	11,156	11,238	11,313	11,383	11,458	11,527
2) Carlin (Norm.)	1,443	1,450	1,457	1,465	1,473	1,480	1,490	1,500	1,510	1,520	1,528	1,535
Project	2	14	38	60	80	96	107	111	121	127	128	130
Total	1,445	1,464	1,495	1,525	1,553	1,576	1,597	1,611	1,631	1,647	1,656	1,665
3) County Balance (Norm.)	8,525	8,570	8,620	8,670	8,720	8,770	8,820	8,870	8,920	8,970	9,020	9,070
4) County Total (Norm.)	20,239	20,427	20,691	20,946	21,178	21,352	21,573	21,719	21,864	22,000	22,134	22,262
Project Total	9	87	237	376	493	552	653	679	704	720	736	747



Mt. Hope Molybdenum Project

Table 3-77 Mine/Process Plant Operations and Generated Housing X Number and Type and Property Tax Revenue, Dispersed Personnel Case 1/

	Year 1				Year 2				Year 3				Year 4			
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
<u>Eureka</u>																
Single Family	1	11	29	44	58	69	76	79	83	85	86	87	86	87	86	86
Apartment	2	15	38	59	77	91	101	105	111	114	115	115	115	115	115	115
Mobile Home	2	20	53	891	106	126	139	144	153	157	158	159	158	159	158	158
<u>Elko</u>																
Single Family	1	7	19	30	38	45	49	50	50	50	51	51	51	51	51	51
Apartment	1	10	25	33	51	60	66	67	67	66	68	68	68	68	68	68
Mobile Home	1	13	35	54	70	82	91	92	92	92	93	93	93	93	93	92
<u>Carlin</u>																
Single Family	0	1	3	5	7	8	9	9	10	11	11	11	11	11	11	11
Apartment	0	2	5	8	9	11	12	12	14	14	14	14	14	14	14	14
Mobile Home	0	2	6	10	13	15	17	17	19	19	20	20	20	20	20	20
<u>Ad Valorem Residential Property Tax Revenues as Incurred (\$)</u>																
<u>Eureka</u>																
Single	50	530	1,400	2,130	2,800	3,340	3,680	3,820	4,010	4,110	4,160	4,210	4,160	4,210	4,160	4,160
Apartment	45	340	860	1,330	1,740	2,050	2,280	2,370	2,500	2,570	2,600	2,600	2,600	2,600	2,600	2,600
Mobile	45	450	1,200	1,830	2,390	2,840	3,140	3,250	3,450	3,540	3,570	3,590	3,570	3,590	3,570	3,590
<u>Elko</u>																
Single	80	570	1,550	2,450	3,110	3,680	4,000	4,090	4,090	4,090	4,170	4,170	4,170	4,170	4,170	4,170
Apartment	40	380	950	1,260	1,940	2,290	2,520	2,560	2,560	2,520	2,590	2,590	2,590	2,590	2,590	2,590
Mobile	40	500	1,330	2,060	2,670	3,130	3,470	3,510	3,510	3,510	3,550	3,550	3,550	3,550	3,550	3,510
<u>Carlin</u>																
Single	0	80	240	410	570	650	730	730	820	900	900	900	900	900	900	900
Apartment	0	80	190	300	340	420	460	460	530	530	530	530	530	530	530	530
Mobile	0	80	230	380	500	570	650	650	720	720	760	760	760	760	760	760

1/ Housing distribution is single family 24%, multi 32%, mobile 44%.



Elko County housing stock would equal less than 3.3 percent of the 1980 7,667 unit stock. Evaluating the urban housing stock only (3,649 of 7,667 units), the additional housing demands represented by the decentralized workforce case would equal an increase of less than seven percent.

Baseline housing requirements for Eureka County were estimated to equal 136 units through the four-year period of peak load (2.66 persons/unit). As such, total Eureka County housing demand would be reached in the fourth year of project activity to a total of 504 housing units versus 680 in the proposed action (376 subdivision units, 304 non-subdivision units).

As indicated for the proposed action, the effects associated with the housing demands of either the proposed action or alternative Case 5-B would be significant. The low availability of housing and limited number of homebuilders/mobile home dealers in Eureka would create a significant housing shortfall, requiring the temporary reliance upon self-provided housing (trailers, campers, mobile homes). All available rental housing would be expected to be absorbed by the population influx. The term of adverse impact caused by implementation of the alternative Case 5-B is expected to be considerably longer than that experienced under the condition of the proposed action. Two and one-half years or more (versus 1 to 1.5 years in the proposed action) may be required before the housing shortfall might be ameliorated.

Whereas the planned development of a housing subdivision (proposed action) mitigates a portion of the anticipated housing shortfall caused by project implementation, no such mitigation action has been assumed under the alternative Case 5-B, Decentralized Workforce scenario. The absence of such action was considered significant, directly affecting the level of adverse impact anticipated.

#### 3.5.3.2 Calculations

(See Section 3.4.3)



### 3.5.4 Local Government and Public Finance

#### 3.5.4.1 Summary

As presented in Section 3.4.4, implementation of the alternative Case 5-B or the proposed action would significantly affect public financing in the region, both beneficially and adversely.

The methods of fiscal analysis utilized between case assessments were identical. Thus, the directly traceable project dollar revenues and per capita expenditure calculations were conducted simultaneously for the proposed action and alternative Case 5-B. Section 3.4.4 presents a detailed review of the methodologies utilized. Summary discussion and tabular data concerning the fiscal impacts of the alternative Case 5-B are presented in the following.

Generated Tax Revenues. A total of approximately 114 million dollars would be generated in the first 50 years of project activity with approximately 93 million dollars being directly distributed to the jurisdictions of origin. State General Fund monies equalling approximately 21 million dollars would be generated and available for distribution (18.5 percent of total revenue generated).

Project generated taxes which would be dispersed to the seven jurisdictions are detailed in Table 3-78. Earliest maximum revenues (without State General Fund monies) from the project tax contribution would equal \$2,386,400 at year 2.5 with the consistent revenue level of \$2,408,600 being achieved during the eleventh full year of project initiation.

Comparison with revenue distributions in the proposed action case indicates that a shift of monies from Eureka jurisdictions to Elko jurisdictions occurs under the alternative Case 5-B. The revenue shift would reduce total Eureka project revenue monies by 3 percent (Eureka County), 1.8 percent (Eureka School District), and 13 percent (Eureka Town). The shift in revenues distribution, while not particularly significant in Eureka jurisdiction totals, substantially increases Elko jurisdictional receipts which are much



Mt. Hope Molybdenum Project

Table 3-78 Annual Tax Revenues Generated by the Project and Distributed to Jurisdiction (1982\$) 1/  
(Decentralized Workers (Case 5-B))

Year (2 qts)	Eureka County	Eureka Schools	Eureka Town	Elko County	Elko Schools	Elko City	Carlin Town	(Total)
1	189,050	121,000	0	300	300	600	100	(311,350)
2	831,600	543,000	500	6,500	6,100	11,800	2,700	(1,402,200)
3	1,315,000	1,004,000	800	17,500	23,400	21,200	4,500	(2,386,400)
4	880,000	860,000	1,000	22,200	32,800	23,900	4,900	(1,824,800)
5	978,000	1,119,000	1,200	22,600	32,800	24,000	4,900	(2,182,500)
6	978,000	1,119,000	1,200	22,600	32,800	24,000	4,900	(2,182,500)
7	989,000	1,141,000	1,300	22,600	32,800	24,000	4,900	(2,215,600)
8	989,000	1,141,000	1,300	22,600	32,800	24,000	4,900	(2,215,600)
9	989,000	1,141,000	1,300	22,600	32,800	24,000	4,900	(2,215,600)
10	989,000	1,141,000	1,300	22,600	32,800	24,000	4,900	(2,215,600)
11	1,088,000	1,235,000	1,300	22,600	32,800	24,000	4,900	(2,408,600)
12	1,088,000	1,235,000	1,300	22,600	32,800	24,000	4,900	(2,408,600)
13	1,088,000	1,235,000	1,300	22,600	32,800	24,000	4,900	(2,408,600)
14	1,088,000	1,235,000	1,300	22,600	32,800	24,000	4,900	(2,408,600)
15	1,088,000	1,235,000	1,300	22,600	32,800	24,000	4,900	(2,408,600)
16-50 2/	-	-	-	-	-	-	-	-

1/ Does not include revenues retained by State for CCRT, SCCRT; Ad Valorem Property Taxes lag one year from year incurred.

2/ Years 16-50 no significant variation.

Source: WRC EIS Team.



lower in base amount than Eureka jurisdictions (Table 3-76). Elko County revenues increase from \$7,100 to \$22,600 (318 percent change), Elko School District from \$10,300 to \$32,800 (318 percent change), Elko City from \$7,300 to \$24,000 (328 percent change) and Carlin from \$1,500 to \$4,900 (326 percent change).

The revenue shift corresponds directly to locale of residency, which under the Decentralized Workforce scenario is more equally distributed between Eureka and Elko Counties, and the jurisdiction in which levying of personal sales and residential property taxes occurs.

Expenditures of Affected Jurisdictions. Table 3-79 presents the forecasted project-related expenditures for each of the affected jurisdictions under the conditions of alternative Case 5-B. The analysis of expenditures was conducted similarly to that for the proposed action. Specifically, modified population/direct cost per capita rates were utilized in the final analysis to determine probable expenditures.

Stabilized project-related expenditures among the seven jurisdictions would total approximately \$1,896,000 with resulting budget balances being a positive \$513,000 (total revenues equalling \$2,409,000). However, by individual jurisdiction, substantial variation in budget balances would be expected as a result of distribution techniques. The Eureka jurisdictions (county, school, town) would experience a positive \$1,105,000 budget surplus although by item the Town of Eureka budget would be in deficit by \$119,000.

As with the proposed action, approximately \$500,000 would be generated annually by the project which have not been included in the budgetary balance calculations. Similarly, substantial justification for the distribution of such monies from the General State Fund would appear feasible and appropriate for legislature introduction.

In sharp contrast to the Eureka jurisdiction budget surplus, the Elko jurisdictions (Elko County, school, city and Carlin) would experience total budget deficits approximating \$592,000. In comparison, the projected Elko deficits under the proposed action scenario would approximate \$161,000



Table 3-79 Net Project-Related Mid-Term Budgetary Shortfalls in Individual Accounts 1/  
Alternative 5-B (\$000)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Decentralized Workforce Case 5-B															
Eureka County															
Expenditures	595	1,516	761	713	709	701	695	694	688	684	682	676	676	671	666
Revenues	189	832	1,315	880	978	978	989	989	989	989	1,088	1,088	1,088	1,088	1,088
Balance	-406	-684	554	167	269	277	294	295	301	305	406	412	412	417	422
Eureka Schools															
Expenditures	244	702	583	560	543	526	511	501	491	482	472	463	453	442	433
Revenues	121	543	1,004	860	1,119	1,119	1,141	1,141	1,141	1,141	1,235	1,235	1,235	1,235	1,235
Balance	-123	-159	421	300	576	593	630	640	650	659	763	772	782	793	802
Eureka Town															
Expenditures	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
Revenues	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Balance	-119	-119	-119	-119	-119	-119	-119	-119	-119	-119	-119	-119	-119	-119	-119
Elko County															
Expenditures	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117
Revenues	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
Balance	-94	-94	-94	-94	-94	-94	-94	-94	-94	-94	-94	-94	-94	-94	-94
Elko Schools															
Expenditures	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366
Revenues	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
Balance	-333	-333	-333	-333	-333	-333	-333	-333	-333	-333	-333	-333	-333	-333	-333
Elko															
Expenditures	157	157	157	157	157	157	157	157	157	157	157	157	157	157	157
Revenues	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Balance	-133	-133	-133	-133	-133	-133	-133	-133	-133	-133	-133	-133	-133	-133	-133
Carlin															
Expenditures	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
Revenues	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Balance	-32	-32	-32	-32	-32	-32	-32	-32	-32	-32	-32	-32	-32	-32	-32
TOTAL															
Expenditures	2,495	3,015	2,141	2,070	2,049	2,024	2,003	1,992	1,976	1,963	1,951	1,936	1,926	1,910	1,896
Revenues	311	1,404	2,387	1,825	2,183	2,183	2,216	2,216	2,216	2,216	2,409	2,409	2,409	2,409	2,409
Balance	-2,184	-1,611	246	-245	134	159	213	224	240	253	458	473	483	499	513
General State Fund 2/	154	600	960	531	497	497	497	497	497	497	566	566	566	566	566

1/ These figures do not include total revenues and expenditures of the related local jurisdictional budgets.

2/ General State Fund - monies generated from project and paid in to General State Fund. Such monies, available for redistribution throughout the State, have not been input to offset or enhance budgetary shortfalls or surpluses, respectively.

Source: WRC EIS Team



annually. The budget differentials are derived from the large expenditure variations caused by the increased population without project tax base support: under the proposed action total expenditures approximate \$186,000 versus \$677,000 in the alternative Case 5-B; with revenues escalating from \$25,000 (proposed action) to only \$85,000 under the alternative Case 5-B.

As Table 3-79 further indicates, the jurisdiction of Eureka School District would be expected to experience significant budget surpluses throughout project life. While the more equal distribution of population results in reduced expenditures, total revenues received vary little from that of the proposed action due to the originating source location (Eureka County) of these generated monies (the mine/process plant itself). The more consistent and extensive budgetary surpluses are contrary to the fiscal impacts expected for the proposed action in which the initial Eureka County budgets progress from deficits to low amount surpluses and the Eureka School District budget shows an initial budget deficit of \$165,000 (Table 3-25) versus a budget deficit of \$123,000 in the alternative Case 5-A scenario.

As described for the proposed action, the Town of Eureka would incur expenditures in excess of revenue without direct county support. In the case of alternative 5-B, the negative balance would total approximately \$119,000 versus the proposed action balance of a negative \$55,000. Contrary to the proposed action, however, the early balance surpluses of Eureka County (\$167,000 and \$269,000 in years 4 and 5, respectively) under the alternative 5-B scenario could accommodate the supplemental assistance to mitigate the Eureka Town budget deficit. The first ten years of project impact would result in a net County/Town budget surplus of approximately \$183,000 in the alternative Case 5-B (versus a budget deficit of 1.4 million dollars). Correspondingly, however, the jurisdictions in Elko County would experience a 10 year total budget deficit of approximately 6.1 million dollars versus that of 1.6 million dollars in the proposed action scenario.

Fiscal Impact Summary of Results. The fiscal analyses conducted to assess the impacts of implementing the alternative 5-B Case, Decentralized Workforce, indicate the following, based on the plans to date and as documented in this Technical Report.



- If implemented, the alternative 5-B scenario would result in the generation of tax dollars totalling approximately 114.5 million dollars over a 50 year period.
- Of the tax monies generated, 21.2 million dollars or 18.5 percent of the total would be distributed within the auspices of the State General Fund program. As described for the proposed action, the jurisdictional revenues are understated by the WRC fiscal impact analysis discussed in this Technical Report in order that a traceable and conservative dollar estimates can be evaluated. As documented in Appendix A of this Technical Report, it is probable that at least the 18.5 percent retained monies (21.2 million dollars) would be distributed to the seven affected jurisdictions.
- The stabilized annual total jurisdictional budget would approximate 2.4 million dollars of revenues and 1.9 million dollars expenditures for an aggregate budget balance surplus of \$500,000. The jurisdictions of Eureka County and Eureka School District would, upon stabilization, incur budget surpluses of \$442,000 and \$802,000, respectively. The Town of Eureka would, however, incur a deficit budget balance of \$119,000 annually. Historically, the Town of Eureka has relied upon external fund sources to offset incurred budget deficits. The Eureka County budget surpluses could, as in the past, provide one source of the required deficit financing.
- The jurisdictions of Elko County, Elko School District, Elko City and the Town of Carlin would experience budget balance deficits totalling in the aggregate approximately \$592,000 on an annual basis. This amount of budget deficit represents a 367 percent increase from the budget shortfalls anticipated in the proposed action (\$161,000). Excepting the distribution of State General Fund monies, no consistently mitigating source of funds was identified to ameliorate the \$592,000 annual budget deficits.
- The total project generated tax monies, including those retained by the General State Fund, would exceed jurisdictional expenditures by



approximately 1.1 million dollars annually (versus 1.2 million dollars in the proposed action).

#### 3.5.4.2 Calculations

Table 3-80 and 3-81 detail the source of revenues generated annually by the project. Expenditures were calculated utilizing the methodologies described in Section 3.4.4 (also see Tables 3-51, 3-57, 3-58, 3-59 and 3-68).

#### 3.5.4.3 Budgetary Impacts of the Mt. Hope Project - Unadjusted

Unadjusted Budget Forecast. Aggregate local tax revenues generated by directly traceable economic activities of the Mt. Hope project in each of the seven jurisdictions, are compared in this section with the aggregate levels of expenditures of the seven jurisdictions which derive from a fixed per capita expenditure level based upon most-recent-year budget accounts (Tables 3-33 and 3-39). The annual totals which are compared reflect no adjustments for a declining cost level per person which most probably would be encountered with a rising population (see text under following subtitle "Adjusted Budget Forecast"). Total revenues shown are the sum of various taxes discussed previously. Capital costs are not included in this evaluation of current operating accounts.

The Start-Up Period: The first 12 quarters of the construction period and initial phase of operations of the mine/process plant are summed below. The seven jurisdictional budget totals on current account show that in no budget accounts except Eureka County (\$880,000 revenues versus 825,000 expenditures) would project revenues meet or exceed the level of current expenditures. The total revenue shortfall in all seven budgets (not



Mt. Hope Molybdenum Project

Table 3-80 Net Quarterly Revenues and Expenditures Generated by Project as Year-End Totals (\$000)

	<u>Year 1</u> <u>1/</u>	<u>Year 2</u>	<u>Year 3</u>
<u>Dispersed Personnel Case 5-C</u>			
Eureka County	189	832	1,315
Property Revenue	0	27	120
Sales Revenue	189	805	1,195
Expenditures w/project	1,523	2,622	1,911
without	928	1,106	1,150
Net Expenditures	595	1,516	761
Eureka Schools	121	543	1,004
Property Revenue	0	55	248
Sales Revenue	121	487	756
Gross Expenditures			
With Project	1,316	1,951	1,875
Without	1,072	1,249	1,292
Net Expenditures	244	702	583

1/ Year 1 revenues reflect one-half year mine/mill startup, but expenditures are full-year, with and without mine/mill.



Mr. Hope Molybdenum Project

Table 3-81 Tax Revenues Generated by Project Annually (Rounded) 1/ (\$)

	4	5	6	7	8	9	10	11	12	13	14	15
II. Dispersed Personnel Case												
Eureka County												
Residential Property	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000
Personal Sales Tax	59,000	59,000	59,000	59,000	59,000	59,000	59,000	59,000	59,000	59,000	59,000	59,000
Mine/Mill Property	192,100	330,100	330,100	340,900	340,900	340,900	340,900	361,100	361,100	361,100	361,100	361,100
Mine Sales Tax (CCRT)	134,800	126,100	126,100	126,100	126,100	126,100	126,100	143,500	143,500	143,500	143,500	143,500
(Suppl. CCRT)	471,700	441,300	441,300	441,300	441,300	441,300	441,300	502,200	502,200	502,200	502,200	502,200
Eureka Schools												
Residential Property	44,400	45,500	45,500	45,500	45,500	45,500	45,500	45,500	45,500	45,500	45,500	45,500
Personal Sales Tax	15,200	15,200	15,200	15,200	15,200	15,200	15,200	15,200	15,200	15,200	15,200	15,200
Mine/Mill Property	395,600	679,900	679,900	702,000	702,000	702,000	702,000	743,700	743,700	743,700	743,700	743,700
Mine Sales Tax	404,400	378,300	378,300	378,300	378,300	378,300	378,300	435,500	435,500	435,500	435,500	435,500
Eureka Town												
Mine/Mill Property	800	1,400	1,400	1,400	1,400	1,400	1,400	1,500	1,500	1,500	1,500	1,500
Personal Sales Tax	190	190	190	190	190	190	190	190	190	190	190	190
Residential Property	80	80	80	80	80	80	80	80	80	80	80	80
Elko County												
Residential Property	22,200	22,600	22,600	22,600	22,600	22,600	22,600	22,600	22,600	22,600	22,600	22,600
Personal Sales Tax	11,500	11,900	11,900	11,900	11,900	11,900	11,900	11,900	11,900	11,900	11,900	11,900
(CCRT)	10,700	10,700	10,700	10,700	10,700	10,700	10,700	10,700	10,700	10,700	10,700	10,700
Elko Schools												
Residential Property	31,900	32,800	32,800	32,800	32,800	32,800	32,800	32,800	32,800	32,800	32,800	32,800
Personal Sales Tax	22,700	23,600	23,600	23,600	23,600	23,600	23,600	23,600	23,600	23,600	23,600	23,600
(CCRT)	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200
Elko City												
Residential Property	23,900	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
Personal Sales Tax	3,500	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600	3,600
(CCRT)	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400	20,400
Carlin Town												
Residential Property	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900
Personal Sales Tax	240	240	240	240	240	240	240	240	240	240	240	240
(CCRT)	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700

1/ Ad Valorem Property Taxes are lagged one year from year incurred.



adjusted to reflect economies of scale, one-item budgets, etc.) combined, annually would be forecasted as follows 1/:

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Expenditures	\$ 502	\$ 4,803	\$ 4,220	\$ 2,766
Revenues	<u>310</u>	<u>1,401</u>	<u>2,386</u>	<u>1,781</u>
(Deficit)	(192)	(3,402)	(1,834)	(985)

The Long Term Period: (Year 5 - Year 15): The stabilized populations of the longer term would produce fixed tax revenues derived from property and sales taxes. However, operations of the corporation would continue to produce variable tax revenues resulting from annual and periodic changes in the levels of expenditure on supplies and equipment (State sales tax), a general rise in the level of property asset valuations, and in net proceeds valuations of mine/process plant output (ad valorem property tax).

Because of the disposition of the variable tax revenues collected from mine/process plant operations, only two of the seven local jurisdictional budgets would be influenced by incremental changes in tax revenues. These jurisdictions would be Eureka County and Eureka School District.

Table 3-82 shows that the accounts which sustain incrementally higher revenues due to mine/process plant operations would begin a reduction of the budgetary shortfalls during this period. The following summarizes Table 3-82. 1/

---

1/ These figures do not include total revenues and expenditures of the related local jurisdictional budgets.



Mt. Hope Molybdenum Project

Table 3-82 Annual Budget Balances: Year 5-15, Unadjusted (\$000)

	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
<u>Dispersed Personnel Case</u>											
<u>Eureka County</u>											
Net Gain With (Revised)	880	978	978	978	978	978	978	1,050	1,068	1,068	1,068
Expenditures With (Net)	825	825	825	825	825	825	825	825	825	825	825
<u>Eureka Schools</u>											
Net Gain With	860	1,119	1,119	1,119	1,119	1,119	1,119	1,193	1,193	1,193	1,193
Expenditures With (Net)	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120
<u>Eureka Town</u>											
Net Gain With	1	2	2	2	2	2	2	2	2	2	2
Expenditures With (Net)	120	120	120	120	120	120	120	120	120	120	120
<u>Elko County</u>											
Net Gain With	22	23	23	23	23	23	23	23	23	23	23
Expenditures With (Net)	117	117	117	117	117	117	117	117	117	117	117
<u>Elko Schools</u>											
Net Gain With	32	33	33	33	33	33	33	33	33	33	33
Expenditures With (Net)	366	366	366	366	366	366	366	366	366	366	366
<u>Elko City</u>											
Net Gain With	24	24	24	24	24	24	24	24	24	24	24
Expenditures With	157	157	157	157	157	157	157	157	157	157	157
<u>Carlin Town</u>											
Net Gain With	5	5	5	5	5	5	5	5	5	5	5
Expenditures With	37	37	37	37	37	37	37	37	37	37	37



	<u>Year 4</u>	<u>Year 5</u>	<u>Year 10</u>	<u>Year 15</u>
Eureka County				
Expend.	\$ 880	\$ 978	\$ 978	\$1,068
Revenues	825	825	825	825
Eureka Schools				
Expend.	1,120	1,120	1,120	1,120
Revenues	860	1,119	1,119	1,119
Eureka Town				
Expend.	120	120	120	120
Revenues	1	2	2	2
Elko County				
Expend.	117	117	117	117
Revenues	22	23	23	23
Elko Schools				
Expend.	366	366	366	366
Revenues	32	33	33	33
Elko Town				
Expend.	157	157	157	157
Revenues	24	24	24	24
Carlin				
Expend.	37	37	37	37
Revenues	5	5	5	5

Eureka County remains the only local budget during the forecast period (Case 5-B) to receive a budgetary surplus from net project-related activities. The Eureka School District budget is the only other variable-revenue budget, and succeeds in reducing the project-related deficit from \$260,000 in Year 4 to \$243,000 by Year 15. All other budgets remain in shortfall during the period.



It is notable that the comparison between Case 5-A and Case 5-B shows an improvement for Case 5-B in achieving the surplus on current account for the Eureka County budget, and in a substantially reduced shortfall in the Eureka School District budget.

On overall aggregate account, the seven budgets combined produce expenditures during 1998 amounting to \$2,985,000 for Case 5-B.

The Period of Year 15-50: In the extended forecast for the period of year 15 through year 50, there would be no betterment of the net project-related accounts in any of the seven jurisdictional budgets. A slight worsening of the deficit is forecasted for the variable-revenue accounts of Eureka County and Eureka School District. This would derive from a decline of \$550,000 annually in mine/process plant expenditures on supplies and equipment during the period, from \$1,650,000 to \$1,100,000 annually, and an anticipated minor decline in net proceeds values of market production. The first affects the level of sales tax revenues and the second the value of ad valorem property tax revenues. (See Table 3-31).

These changes are shown on Table 3-83, for the variable-revenue accounts which reflect such changes. The amounts shown are in 5-year intervals, stated as annual average revenues.

#### 3.4.4.5 Budgetary Impacts of the Mt. Hope Project - Adjusted

Adjusted Budget Forecasts. As previously described in detail, an analytical survey of forecasted expenditures was conducted to assess the potential for, and likelihood of, economy of scale and real time budgeting within Eureka County and School District as a result of eventual proposed action consequence. The regression analysis conducted clearly indicated both the potential and extent of such real occurrence within Nevada and as such was relied upon in the final fiscal budget analysis to determine impact significance.

To illustrate the effect (and expected most probable case upon alternative Case 5-B implementation) of the regression analysis results and subsequent budget impacts, Tables 3-80 and 3-68 (Section 3.4.4) are presented



Mt. Hope Molybdenum Project

Table 3-83 Extended Average Annual Budget Balances in 5-Year Intervals, Unadjusted (\$000) 1/

	Year	Year	Year	Year	Year	Year	Year
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Dispersed Personnel Case							
Eureka County: Net Expenditures	825	825	825	825	825	825	825
Net Gain With Mine/Mill Contrib.	879	892	892	892	892	892	892
	<u>798</u>	<u>811</u>	<u>811</u>	<u>811</u>	<u>811</u>	<u>811</u>	<u>811</u>
Eureka Schools: Net Expenditures	1,120	1,120	1,120	1,120	1,120	1,120	1,120
Net Gain With Mine/Mill Contrib.	1,105	1,131	1,131	1,131	1,131	1,131	1,131
	<u>1,044</u>	<u>1,070</u>	<u>1,070</u>	<u>1,070</u>	<u>1,070</u>	<u>1,070</u>	<u>1,070</u>

1/ Time lag in Property Taxes occurs only in fifth to sixth year. Not adjusted.



to detail budget forecasts of revenues/expenditures for Eureka County and Eureka County School Districts.

Table 3-25 (reproduced hereafter for facilitating review as Table 3-69) the budgetary impact of expenditure adjustments to reflect both realistic economies of scale and direct cost budget items (e.g., direct teaching costs). The following details the impact variation from the invalid assumption of straight line per capita expenditure costing.

The Start-up Period: The total revenue shortfall in all seven budgets combined during the first four years would be as follows:

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
Expenditures	2,495	3,015	2,141	2,070
Revenues	<u>311</u>	<u>1,404</u>	<u>2,387</u>	<u>1,825</u>
Surplus/(Deficit)	(2,189)	(1,611)	246	(245)

Contrary to the continued deficit expenditures of the Eureka County School District under the unadjusted basis, it would be anticipated that project revenues would exceed actual adjusted expenditures in year 3, continually exceeding such expenditures during the project period (as in Case 5-A). Eureka County expenditures would similarly be exceeded by revenues received except that such would occur in year 2 instead of in year 6 as in the proposed case. As the regression analysis could not encompass Elko County jurisdictions, nor the Town of Eureka, no variation has been recorded in the adjusted fiscal analysis presented on Table 3-78. As such, it remains anticipated that budget deficits would accrue in Elko jurisdictions relative to direct matching of project revenues and expenditures. Again the difference in revenues received would be contributory from state tax laws. As can be noted, however, significant variation exists between the Elko School District budget deficits of the proposed action and that of alternative Case 5-B.

The Period of Year 5 to Year 50: In the net combined case of all seven jurisdictional budgets, the direct project revenue/expenditure balance would increase from a surplus of \$134,000 annually in year 5 to \$513,000 annually



in year 15. The extended forecast of year 15 to year 50 would, as described previously, result in a slight decline of revenues received but would not create a deficit match situation.

Note Regarding General State Fund Monies: As indicated on Table 3-79, the implementation of the alternative Case 5-B would result in revenues being accrued to the General State Fund ranging from \$154,000 (year 1) to \$960,000 (year 3) annually with a stabilized revenue generation approximating \$566,000 annually, in excess of the combined budget surpluses of \$513,000. As detailed in Appendix A of this Technical Report (Appendix E of the EIS), historical review of the county budgets indicates eventual receipt of such monies in excess of that collected within the jurisdiction. While not distributed in the analysis, herein, such redistributed monies would effectively contribute to significant impact mitigation within both Elko and Eureka Counties.

### 3.5.5 Attitudes and Lifestyles

As in the analysis of the proposed action, the potential for impacts upon the general attitudes and lifestyles of the Eureka County population as result of Case 5-B implementation was evaluated on the basis of two criteria: 1) rural lifestyle; and 2) historical "ambiance" within Eureka Town.

The population influx of Case 5-B scenarios would directly affect the rural lifestyles of the existing Eureka County resident populations. As in Case 5-A, however, the effects within Elko County upon implementation of the Case 5-B alternative were determined insignificant as a result of its rural/urban composition and larger population base.

The dispersed population characteristics of Case 5-B would largely be the determining factor in local population attitudes toward the project. Contrary to the proposed action, Case 5-B personnel would be required to fulfill housing and recreational needs without the benefit of a centralized, available complex. Significant competition for scarce housing would be expected to result in conflicts between local residents wishing to upgrade or purchase new homes simultaneous to in-migration of the workforce. Location siting of housing could be an irritant to locally established land use patterns;



a concern that has been emphasized to date. The potential that a dispersed population may be implemented would be expected to undergo immediate local scrutiny with probable zoning ordinance debates being undertaken and initiating conflicts.

Overall, the Case 5-B alternative increases the likelihood of resident negative perceptions due to its intrinsic random approach to integration within the community. With regard to Historic District effects, under the Case 5-B scenario circumstances, no significant potential for impact was identified. The increased housing requirements would be expected to exert some pressure upon property located within and in proximity of the Town. Extensive use of such properties to accommodate the natural desire to group housing units near service facilities would present a potential for impacts on the Historic District. A quantified probability of such an impact could not be assessed. Based, however, on the currently high and increasing resident and local government desires to maintain and improve the quality of the Historic District, it was determined that impact potential was low. The determination was based on the assumption that restrictive land controls such as zoning ordinances and architectural specifications would be established and enforced.

### 3.5.6 Community Facilities and Services

#### 3.5.6.1 Summary

Schools. Population projections for Case 5-B indicate that an additional total of 326 students (same as proposed action) would require schooling at the point of project impact stabilization (3.75 years for school population). Distribution of the students and number of classrooms required have been estimated as shown in Table 3-70.

As in the analysis of the proposed action, classroom requirements were determined on a worst-case basis with the assumption that full capacity use had been achieved at the affected schools.



Under the Case 5-B scenario, the dispersed population of personnel would result in a 30 percent decrease in required Eureka classroom space from that of the proposed action: 10 versus 13. The additional requirements would still represent an impact of significance to the district school system. In terms of expansion, Case 5-B costs to Eureka have been estimated to equal approximately \$1.4 million or 13.6 percent of district bonding capacity.

Teacher requirements under the Case 5-B scenario would equal approximately 14 and 8 for the 1:14 and 1:19.4 (upgraded) ratios, respectively. The reduction of teacher staffing requirements (39 and 53 percent, respectively) in comparison to the Case 5-A requirements would result in licensed housing provision difficulties as well as lower district budget expenditures.

The variations in district expansion requirements relative to Case 5-A and Case 5-B directly reflect an associated increase of expenditure requirements by the Elko County School District under Case 5-B circumstances. While the dispersal of costs associated with staffing, facility expansion, etc. would be beneficial to the Eureka County School District, a substantial inequity of costs would be accrued to the Elko County school system. Under Case 5-B circumstances, the impact budget deficits significantly increases for Elko County (see previous sections, 3.4.4 and 3.5.4).

Health. As in the proposed action, health care services within the Town of Eureka area would be directly affected by implementation of the Case 5-B alternative. The impacts associated with the provision of health care services (federal, state, county and volunteer) are expected to progress from being generally negative during the early period of construction (1 to 2 years) to being beneficial in nature during the period of late construction through operation.

Case 5-B implementation would, however, result in a diminished potential for beneficial impacts and would probably extend the period of negative impacts related to staffing and facility shortages. It is expected that the private professional health care sector would respond to population demand as in the proposed action Case 5-A but that response time might be extended and less specific in terms of area of need (e.g., Town of Eureka).



The increased distribution of population to Elko is expected to result in a probable expansion of existing hospital facilities (i.e., building wing addition of 10 to 20 rooms).

Law Enforcement. Both the county sheriff's department and county court system of Eureka would be directly affected by the increased populations induced by Case 5-B. Elko County law enforcement agencies would be affected only to a minor extent under the alternative case. As in Case 5-A, the associated impacts are primarily of an indirect nature (e.g., increased number of vehicles) versus direct impacts associated with long-term crime levels.

Under Case 5-B circumstances, the dispersed location of the project population would require the additional employment of three duty officers, three administrative/support personnel and one or two patrol vehicles. Additional facilities within the county would also probably be required.

Elko County law enforcement requirements resulting from Case 5-B implementation are expected to be limited to the necessary staffing addition of one or two duty officers.

As in the proposed action, additional workload upon the existing law enforcement system may be anticipated to rise generally in proportion to the population increase. The short-term construction period may be accompanied by higher frequencies of misdemeanor occurrences but is not expected to pose a direct significant effect.

Fire Protection. No significant impacts to fire protection services were identified for the Case 5-B alternative. The dispersed location of the additional population of Case 5-B would generally limit the need for major improvement requirements such as an additional fire department station. An additional fire truck and support equipment would be required to provide for adequate service capabilities. The volunteer personnel system would also probably require supplement with a paid fire protection workforce of two to five employees.



Public Utilities and Communications. As in the analysis of the proposed action, no direct impacts of significance were identified relative to project and population demands upon electrical, gas, telephone or general communication systems. The dispersed population may tend to facilitate any system expansion requirements simply due to magnitude of expansion required.

Water and Wastewater. Impacts upon the water and wastewater systems of Elko and Eureka following implementation of Case 5-B were analyzed in terms of local county budget expenditures. As in the Case 5-A analyses, cost of system developments and annual maintenance were incorporated in the budget expenditure/revenue impact assessment. Capital expenditures, difficult to accurately assess because of unknown residential location, were assumed to be limited because counties are not likely to authorize a high cost mainline extension to widely dispersed residences.

Solid Waste. No impacts of significance were identified relative to availability or adequacy of the solid waste management system upon implementation of the Case 5-B alternate.

Community Facilities. As described for Case 5-A impacts, most, if not all, of the available community facilities in the vicinity of Eureka Town would experience increased visitation and/or use if Case 5-B was implemented. To perhaps a lesser extent than in the proposed action, additional social organization (e.g., churches, social clubs, etc.) may be expected to develop in response to demand.

Under the Case 5-B alternative, indirect effects (e.g., displeasure with crowding of county pool) were identified to be significant. The lack of a subdivision recreational area would be significantly adverse in light of the increased population use demand.

### 3.6 No Action

Due to project location, Eureka County and its immediate environs including the county seat, Eureka would reap the major share of the benefits and liabilities resulting from implementation of the proposed action at Mt.



Hope. These geographic and governmental entities will also be the objects of consequence in the event no project is initiated at Mt. Hope. It is the intent of this section to explore the consequences of the no action alternative, which assumes that project development would not occur.

#### 3.6.1 Employment

In the absence of the Mt. Hope project, the employment and economic base of Eureka County would become more dependent on the agricultural sector located in Diamond Valley. At the present time, this base is not sufficient to sustain the County and the latter relies, somewhat heavily, on outside funds to support its economy. In the absence of the project, the economy would remain in its present condition and subject to variations in agricultural markets. With respect to the latter, the agricultural sector in Diamond Valley is vulnerable to several uncontrollable factors, including the availability of water and extreme weather conditions. Therefore, the economic base will also be subject to severe out-of-phase fluctuations.

The economic base of Elko County and Elko City would largely be unaffected by implementation of the no action alternative because of its broad base of support. Its economic base would therefore continue as projected.

Under the no action alternative, employment and income in Eureka County would largely follow the economy discussed above and would, as a result, remain slightly depressed during the good cycles and moderately depressed in poor cycles. The reason for these dampened cycles is because the singular agricultural base would not allow income and employment to accelerate during good economic times nor would it cease under poor economic conditions. This, of course, describes a condition of stagnation which could be comfortable for some financially established inhabitants but discouraging for many others.

#### 3.6.2 Population

The population of Eureka County is basically split between the Town of Eureka and the rural county population. These populations, subject to



extreme periodic fluctuations, have been slowly degrading for the past 60 years from lack of a stable industrial base. The total population of Eureka County now stands at approximately 2,000 with 1,200 inhabitants located in rural areas and the remainder in Eureka. It is anticipated that the population of Eureka County under the no action alternative would stabilize at approximately 1,800 inhabitants with a mix of 600 in the Town of Eureka and the rest in the rural areas. These projections exclude the addition of any new industrial or governmental projects within, or in close proximity, to Eureka County. The impact of no project on the Elko County area will be slight with fairly steady growth occurring as projected.

### 3.6.3 Housing

As discussed previously, the populations of Eureka County and Town have been slowly diminishing. It is anticipated that the levels will continue to diminish in the future without the mine project or similar undertakings being started. Therefore, the present housing along with a very limited amount of new housing would be sufficient to meet the basic needs of Eureka County and its environs in the immediate future. However, there would be little incentive for newcomers to make an investment in long-term private housing (mortgages of 10 years or more) if the economic conditions of Eureka County were stagnant. It is expected that newcomers would, for long periods of time, rely upon temporary or mobile habitations which would exaggerate the stagnant image to the point that it would undermine, even further, the tendency for long-term investment in the county. The existing housing conditions of Eureka County would additionally tend to impact resident use in that, without economic stimulus, presently available but poor quality housing would undergo no significant impetus for improvement or abandonment. The impact of the no action alternative on Elko County and the Town of Elko would be minimal for reasons stated previously.

### 3.6.4 Local Government and Public Finance

The no action alternative presents a more limited financial horizon to Eureka County and its inhabitants than does the proposed action. The total monetary resources generated by the project over a 50 year period would



exceed 100 million dollars. This would not necessarily mean the County would receive an economic windfall because of the large expenses involved in providing the necessary public services for a growing population. In the absence of the project, however, the County would continue to require an infusion of revenue from outside sources and would continue to lack the financial leverage necessary to support large scale or more developed public service projects without state or federal backing. Elko County, with its much larger population and broad tax base would not be adversely affected to any great degree, and would in fact not experience the project related deficits expected under the proposed action or alternatives.

#### 3.6.5 Attitudes and Lifestyles

In the absence of the project, the lifestyles and attitudes of the residents will remain essentially unchanged. This is, of course, beneficial to those who are comfortable (large landowners, etc.) or those who desire sparse population to achieve a degree of solitude. On the other hand, a status quo situation would also create a feeling of despair or hopelessness in some, especially in the young, which would undoubtedly cause out-migration of those who are able to go causing further stagnation.

#### 3.6.6 Community Facilities and Services

Schools. Because of slowly diminishing populations, the present school system within Eureka County would be sufficient to satisfy demand. However, there will be very few funds available for large improvements or additional supplies without outside help. It is anticipated that there will also be a lack of incentive for new teachers to locate in the system if the economic sector achieved the degree of stagnation discussed previously. The Elko school system would be insulated from these problems because of its larger size and because most of the project impact would occur in Eureka County.

Health. In the absence of the project, health care facilities in Eureka County would remain virtually unchanged or may even deteriorate slightly. Without new resources, there would be no incentive or funds for the construction of new facilities. Without new facilities, medical professionals



would not wish to locate or relocate in the county. This would force Eureka County to become more dependent on the medical resources of Elko County. There would also be less likelihood of new facilities for the aged and infirm in the Eureka County area causing a hardship on those who require nursing home care and the families that may be forced to travel long distances to find adequate care.

Law Enforcement. In the absence of the Mt. Hope project it is anticipated that little change would occur with respect to law enforcement activity in Eureka County and its local subdivisions. With a stable or declining population and a relatively flat economy, law enforcement activity could remain at its present level for an indefinite period of time. There would be requirements, from time to time, for new equipment and/or personnel as a result of a normal turnover of personnel and hardware. Larger purchases would most likely be financed using outside grant money from state or federal sources. Elko County and Elko City would not be affected by the no action alternative in any appreciable way in terms of its law enforcement activities.

Fire Protection. As with law enforcement, it is anticipated that there would be little change in the manner or degree of fire protection in Eureka County in the absence of the Mt. Hope project. Fire equipment and personnel would remain largely at the present level with few changes in personnel quantity or hardware. Elko City and Elko County would continue to grow slowly but steadily as projected and would not be influenced greatly by the absence of the project.

Public Utilities and Communication . It is anticipated that few changes would occur in Eureka County and Town in public utilities and communications without the project. New innovations in communications technology do not come swiftly to areas of little or no growth. The present system of utilities are adequate for the present population and will remain adequate for a considerable period of time in view of the projected growth for Eureka County without the project or any other activity of an equivalent size. The Eureka County population will be somewhat reliant on Elko County and City for access to the most up-to-date advancements in communications since Elko is located on important transportation corridors and would most likely be the recipient



of new technology at a much faster rate. With the possible exception of inter-communication between Elko County and Eureka County, the absence of the project would have no appreciable impact on the public utilities or communications systems of Elko County and City.

Water and Wastewater. In the absence of the project, the facilities and system of water supply would continue to be developed along present lines and would be adequate to meet rising demands as long as sufficient controls govern their usage. The Town of Eureka would also have sufficient supplies to support its activities at its present and projected population. The water supplies of Elko County and its political subdivisions would be unaffected in the absence of the project.

The wastewater facilities of Eureka County and Eureka Town would be sufficient to meet the demands of both the rural and town populations in the absence of the project because of the limited growth projections. The facilities would most likely be maintained at their present levels with occasional renewal as facilities reach optimum life. As in the case of public utilities, renewal of equipment would require the use of outside funding from state or federal sources. The absence of the project would have no appreciable impact on the wastewater facilities of Elko County or Elko City.

Solid Waste. Since there would be little growth anticipated for Eureka County in the absence of the project, the present solid waste disposal system would be sufficient to handle the demand in the foreseeable future. The no action alternative would have no impact on solid waste disposal planning in Elko County.

Community Facilities. It is anticipated that, in the absence of the project, the population of Eureka County would continue to have only limited access to common social services. Social service programs are usually most accessible in areas of dense population or where populations are growing rapidly and thereby causing a demand for the services. Since practically no growth is projected for Eureka without the project it is unlikely that new social service programs will become established in the County. Elko County, which already has considerably more to offer in the way of public and private



social service programs, would not be affected by the no action alternative. In some cases, the social service programs in Elko County may partially serve the needs of some residents of Eureka County and it is likely that this relationship would continue in the future.

As in the case of social services, community facility resources are more prevalent in densely populated areas. Therefore, because little growth is projected for Eureka County, community facilities would remain basically as they are at the present time in the absence of the project. In Elko County, community facilities would continue to grow modestly in response to the steady increase in the population base projected for the area. The no action alternative would not have a significant impact on the community facilities of Elko County or City.



CHAPTER 4.0  
LIST OF PREPARERS

4.1 BUREAU OF LAND MANAGEMENT

BERTON E. BRESCH, Nevada State Office Sociologist

B.A. Sociology, California State University, Sonoma

M.A. Counseling, California State University, Sonoma

Experience includes nine years experience with Bureau of Land Management; socioeconomic review.

TERESA McPARLAND, Area Geologist

B.A. Geology, Stephens College, MO.

Experience includes four years experience with Bureau of Land Management; coordinator, writer-editor; geology review.

PAUL E. MYERS, Nevada State Regional Economist

B.S. Economics, University of Nevada, Reno

Experience includes eleven years with Bureau of Land Management; economics review.

NEIL D. TALBOT, Area Manager.

B.S. Range Management, Utah State University, Logan.

Experience includes twenty years with Bureau of Land Management; team leader.



ED TILSEY, Nevada State Environmental Specialist.

B.S. Wildlife, University of Montana.

Experience includes nine years in environmental protection with Bureau of Land Management; overall document review.

#### 4.2 CONSULTANTS

ROBERT C. WYATT, Project Manager

B.S. in Biology, University of Miami

Post Graduate Study, Biology, University of Miami

Mt. Hope Project: Responsible for coordination of environmental discipline impact analyses (except cultural resources) and direction of the third party EIS scientific team; technical and regulatory (NEPA) oversight and management of EIS documentation; and liaison and coordination with the Bureau of Land Management (BLM) and EXXON.

Experience includes management and technical analyses of environmental impact studies involving surface and underground mines, nuclear and coal-fire electrical generating plants, petrochemical and mineral process facilities, and hazardous waste/nuclear disposal site regulatory analysis. Professional experience involving activity in 23 states, Mexico and Puerto Rico has included the technical critique and environmental discipline analysis of hydrology, air quality, chemical and mine engineering, terrestrial and aquatic biology, socioeconomics, land use, pollutant toxicity and regulatory compliance.

WARREN K. GILBERT, Economist

B.A. in Economics, University of Washington

M.A. in Economics, University of Washington

Post-Graduate Diploma, New York Institute of Finance



Mt. Hope Project: Responsible for analysis and technical report preparation involving socioeconomic baseline characteristics and project impacts.

Professional experience in excess of 26 years includes national and international finance analyses; industry and agribusiness preinvestment studies, forecasts and market analysis; regional and urban economic base studies, economic activity, resource utilization and growth analyses. Projects include U.S. Department of State (Agency for International Development) and Export-Import Bank of the United States representation.

ALAN EASTMAN, Planner, Impact Analyst

B.A. in Geography, Mankato State University

M.A. in Urban and Regional Planning, University of Iowa

Mt. Hope Project: Assisted in the characterization and analyses of socioeconomic conditions.

Professional experience includes cost and feasibility analysis of state agency plans and projects; impact and managerial analysis of human resource service delivery entities in the areas of education, criminal justice, aged and developmentally disabled; location and economic feasibility analysis for private industry and government; and impact analysis of regional investment decisions. As a planner for more than twelve years, project activity has involved watershed assessments, urban field development (economic and social impact), recreation demand studies and transportation planning. Employment has included responsibilities as Social Services Coordinator for the Nebraska State Planning Office.

C. MICHAEL COWAN, Land Use Analyst

B.S. in Geology, University of Nebraska

M.S. in Ecology-Zoology, University of Nebraska

Ph.D in Ecology-Zoology, University of Nebraska



Mt. Hope Project: Responsible for baseline determinations and impact analyses concerning land use patterns and project plans. Assisted in technical analysis and report preparation of socioeconomic impacts.

Professional experience in excess of thirteen years has emphasized the performance and interpretation of social, economic and habitat studies relative to land use modification plans (watershed reservoir developments, mine operations, transportation systems and mineral processing facilities siting). Researched and developed the Vertically Integrated Geographic Information System (VIGIS) for the management and planning of natural and urban resources.

KEVIN P. MULLEN, Regulator/Environmental Analyst

B.S. in Pre-Med/Biology, Stonehill College, North Easton, Massachusetts

M.S. in Biology, Northeastern University, Boston, Massachusetts

Mt. Hope Project: Responsible for quality assurance in documentation of EIS technical reports.

Professional experience includes marine and tropical ecology/impact assessment and transfer of technology. His managerial/administrative experience includes environmental and planning studies for the petroleum, chemical, mining/metals and utilities industries. He has contributed to baseline and impact assessments related to nuclear and fossil-fuel power plants, offshore energy, coastal oil fields, port development, and agri-business. He has eight years international experience in coastal resources planning and development, higher education and formulation of environmental regulations.

DIANE YARBERRY, Data Coordinator

B.A. in Education, Texas Christian University

Mt. Hope Project: Responsible for baseline data acquisition, preliminary assimilation, and performance of literature search activities.



Professional experience includes the management supervision of several environmental, engineering and legal compliance documentation efforts involving major surface and underground coal mines; the performance of literature based data search and acquisition projects emphasizing the disciplines of hydrology, biology, soil and pollution control systems; and the analysis/communication of project-specific regulatory procedures.

#### 4.3 EXXON

KIT R. KRICKENBERGER, Environmental and Regulatory Affairs

B.S. Geology/Chemistry, Bowling Green State University

Ph.D. Marine Geochemistry, University of Maryland

Mt. Hope Project: Responsible for overall supervision in preparation of EIR, liaison and coordination with BLM and other federal agencies.

Experience includes management of large multi-disciplinary environmental consulting group preparation of many site-specific, regulatory and programmatic NEPA compliance documents for several federal agencies.

CHARLES F. LANO, Engineering Advisor

B.S. Civil Engineering, Georgia Institute of Technology

Mt. Hope Project: Project core team member responsible for coordinating electrical, socioeconomic, community development, communications, transportation, general facilities on-off site, and manpower studies.

Experience includes supervision or management of railway maintenance, brick manufacturing petroleum marketing terminal and mine production operations.

FRIENDSWOOD DEVELOPMENT COMPANY

(need names from EXXON)



CHAPTER 5.0  
SOCIOECONOMICS GLOSSARY

Ad Valorem Taxes. In proportion to the value; imposed at a rate percent of the value as stated in an invoice. In Nevada refers to property tax.

Basic Employment. Employment that responds to changes in demand outside the local economy and which supports additional employment, i.e., the non-basic or service sector employment.

"Boom Town Syndrome". A rapid development in population and importance of an area; a rapid settlement and development of a town or district due to widespread expansion of economic activity usually due to mining/mineral exploration.

Census. A count of the population and a property evaluation; a periodic governmental enumeration of population.

Decentralized Workforce. Refers to the dispersion or distribution of housing for the workforce; housing units are not centralized or in the same area as the mining project.

Demographics. Of or relating to demography. Relating to the dynamic balance of a population esp. with regard to density and capacity for expansion or decline; statistical study of human populations.

Economic Base. The economic base of an economy refers to the total of its basic employment and the sectors in which that employment occurs.

EMT's. Emergency Medical Technicians; persons trained and certified to provide emergency medical treatment necessary to sustain life.

Fiscal. Of or relating to taxation, public revenues, or public debt.

Fiscal Year. An accounting period of 12 months.

Jurisdiction. The power, right, or authority to interpret and apply the law; the limits or territory within which authority may be exercised; control.

Labor Force. All persons 16 years of age or over within a specified geographic area who are either employed or unemployed.

Subsistence/Non-Subsistence. The condition of remaining in existence; inherence; means of subsisting as the minimum necessary to support life; a source or means of obtaining the necessities of life.



CHAPTER 6.0  
BIBLIOGRAPHY

6.1 Bibliography of Citations

- Bureau of Business and Economic Research, University of Nevada, Reno. 1983. "An Analysis of the Economic Impact of the Mining Industry on Nevada's Economy".
- Conger, Thomas A. 1974. County of Eureka General Plan. (Sharp, Krater and Associates, Inc.)
- Henningson, Durham and Richardson (HDR). 1980. M-X Environmental Technical Report (ETR) 27, Economic Model. December 22.
- HDR. 1980. M-X ETR 28, Social Model. December 22.
- HDR. 1980. M-X ETR 29, Public Finance Model. December 22.
- HDR. 1980. M-X ETR 30, Indirect Effects Index for Impacts Analysis. December 22.
- HDR. 1980. "Socioeconomic Impact Estimates for Eureka County, Nevada". Prepared for United States Air Force Ballistic Missile Office Norton Air Force Base, California. December 22.
- Kenley, M. 1984. Personal Communication. Superintendents Office, Elko Independent School District.
- Manning, Helen and McMillian, Doug. 1983. "Eureka: Residents Love It Despite Boom or Bust Industry". Gazette Journal. Reno, Nevada. August 14.
- Nevada Bureau of Mines and Geology. 1983. The Nevada Mineral Industry - 1982. Special Publication MI-1982.
- "Nevada Review of Business and Economics". University of Nevada, Reno. Various issues.
- Rush, Gary Alfred. 1976. An Analysis of Real Property Transfers in Elko County, Nevada. Masters Thesis, University of Nevada, Reno.
- Sceirine, K. 1984. Personal communication. Nevada Security Department.
- State of Nevada. 1981. "Nevada Statistical Abstract - 1981". December.
- State of Nevada. 1981. State of Nevada Reply to EIS for M-X Missile System. 2 volumes. May.
- State of Nevada Department of Conservation and Natural Resources. 1982. Financing Guide for Community Water and Wastewater Systems in Nevada. 190 p. 29-C76WP/5:5.
- State of Nevada, Governor's Office of Planning Coordination. 1982. Biennial Report of Nevada State Agencies.



State of Nevada, Office of Community Services. 1982. Elko County Profile.

\_\_\_\_\_. 1982. Eureka County Profile.

\_\_\_\_\_. 1982. Lander County Profile.

\_\_\_\_\_. 1982. Nye County Profile.

\_\_\_\_\_. 1982. White Pine County Profile.

## 6.2 Complete Bibliography

Bureau of Business and Economic Research, University of Nevada, Reno. 1983. "An Analysis of the Economic Impact of the Mining Industry on Nevada's Economy".

Bureau of Business and Economic Research, University of Nevada, Reno. 1983. Population Projections for Eureka County.

Carlson, B. 1983. Personal communication. Sheriff, Eureka County.

Cartwright, T. 1983. Personal communication. U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System.

Conger, Thomas A. 1974. County of Eureka General Plan. (Sharp, Krater and Associates, Inc.)

Conway, D. 1983. Personal communication. Diamond Valley Volunteer Fire Department.

Desert Research Institute. 1980. Industry Activity Inventory: Nevada M-X Siting Area. A report to Fugro National, Inc. May.

Figurski, D. 1983. Personal communication. Union Pacific Railroad, Carlin, Nevada.

Fiorenzi, L. 1983. Personal communication. Eureka Town Public Works Dept.

Friendswood Development Company. 1982. Community Development Study, Mt. Hope Project, Eureka County, Nevada for EXXON Minerals Company. March.

Henningson, Durham and Richardson (HDR). 1980. M-X Environmental Technical Report (ETR) 27, Economic Model. December 22.

\_\_\_\_\_. 1980b. M-X ETR 11, Geology and Mining. December 22.

\_\_\_\_\_. 1980. M-X ETR 28, Social Model. December 22.

\_\_\_\_\_. 1980. M-X ETR 29, Public Finance Model. December 22.

\_\_\_\_\_. 1980. M-X ETR 30, Indirect Effects Index for Impacts Analysis. December 22.



- \_\_\_\_\_. 1980. "Socioeconomic Impact Estimates for Eureka County, Nevada."  
Prepared for United States Air Force Ballistic Missile Office  
Norton Air Force Base, California. December 22.
- Hoekenga, Marion P. 1983. A Guide to Eureka: Entertainment, Recreation,  
Merchants and Services.
- Institute for Social Science Research. 1974. A Comparative Case Study of  
the Impact of Coal Development on the Way of Life of People Living in the  
Coal Areas of Eastern Montana and Northeastern Wyoming. University of  
Montana, Missoula.
- Iseraldi, J. 1983. Personal communication. County Clerk's Office, Eureka  
County Tax Assessor.
- Kenley, M. 1984. Personal Communication. Superintendents Office, Elko  
Independent School District.
- Manning, Helen and McMillian, Doug. 1983. "Eureka: Residents Love It Despite  
Boom or Bust Industry". Gazette Journal. Reno, Nevada. August 14.
- Molke, S. 1983. Personal communication. Acting Superintendent, Eureka  
County Schools.
- Mt. Wheeler Power, Inc. 1983. EIR Report, 230 kV Transmission System.  
January 31.
- Nevada Bureau of Mines and Geology. 1983. The Nevada Mineral Industry - 1982.  
Special Publication MI-1982.
- Nevada Employment Security Department. 1976-1979. Nevada County Labor Force  
Summaries.
- "Nevada Review of Business and Economics". University of Nevada, Reno.  
Various issues.
- Pastorino, D. 1983. Personal communication. Eureka County Commissioner.
- Rush, Gary Alfred. 1976. An Analysis of Real Property Transfers in Elko  
County, Nevada. Masters Thesis, University of Nevada, Reno.
- Sceirine, K. 1984. Personal communication. Nevada Security Department.
- Smith, Roy. 1975. Final Report. Research and Development Project in Career  
Education. March.
- State of Nevada. 1981. "Nevada Statistical Abstract - 1981". December.
- State of Nevada. 1981. State of Nevada Reply to EIS for M-X Missile  
System. 2 volumes. May.
- State of Nevada Department of Conservation and Natural Resources. 1982.  
Financing Guide for Community Water and Wastewater Systems in Nevada.  
190 p. 29-C76WP/5:5.



State of Nevada, Governor's Office of Planning Coordination. 1982. Biennial Report of Nevada State Agencies.

State of Nevada, Office of Community Services. 1982. Elko County Profile.

\_\_\_\_\_. 1982. Eureka County Profile.

\_\_\_\_\_. 1982. Lander County Profile.

\_\_\_\_\_. 1982. Nye County Profile.

\_\_\_\_\_. 1982. White Pine County Profile.

Todd, J. 1983. Personal communication. Eureka Volunteer Fire Dept.

U.S. Bureau of the Census, 1980.

United States Department of Interior (U.S.D.I.), Bureau of Land Management. 1983. Draft Shoshone - Eureka Resource Management Plan and Environmental Impact Statement. Battle Mountain District, Nevada.

U.S.D.I., Bureau of Land Management. 1980. Final Environmental Impact Statement, Anaconda Nevada Moly Project.

U.S.D.I., Bureau of Land Management. 1982. Guide to Social Assessment. July.

Wilcox, L. 1983. Personal communication. Budget Analyst, Nevada Department of Taxation.

Wright, D. 1983. Personal communication for 1980-1982 data. U.S. Dept. of Commerce, Bureau of Economic Analysis, Regional Economic Information Systems.



## APPENDIX 1



APPENDIX 9-A  
STATE GENERAL FUND PROGRAM  
REDISTRIBUTION

1.0 Introduction

1981-82 and 1982-83).

Nevada State sales taxes are composed of four separable tax levies which are earmarked as to use:

Local school support	1.5%
State General Fund	2.0
County city relief	0.5 (CCRT)
Supplemental CCRT	1.75
Total	5.75%

General Government	Regulatory
Education	Conservation,
	Agriculture,
	Energy
Human Resources	Highways,
	Department of
	Motor Vehicles
Public Safety	Miscellaneous

The fiscal impact analysis conducted for the Mt. Hope EIS has taken full account of the distribution of each levy among the revenue sources of counties, school districts and towns with the exception of the 2 percent allocation to the State General Fund. The final use of these revenues is described in the following section, where it is seen that the main employment of the 2 percent sales tax component in the past has been to provide additional support to the public school system.

2.0 Redistribution Summary

In fiscal years 1981 and 1982, the 2 percent sales tax amounted to approximately \$130 million and represented about 37 percent of total general fund revenues of the state. General fund revenues were constituted of taxes, licenses, fees and fines, service charges, and interest earnings, as shown on Table A-1. Authorizations and appropriations out of this fund are recommended by the Governor, authorized by the legislature and approved by the Governor, for individual fiscal years. These authorizations are mainly by sector, as listed below, for which projects and programs within each sector are only generally identified in the Legislative Appropriations Reports. Table A-2 details prior allocations (fiscal years

The amounts allocated to education in 1981 and 1982 out of the State General Fund included funds for the University system and related facilities, as well as for the elementary and secondary school system. The education allocations totalled \$195 million and \$224 million, or about 52.5 percent of the total general fund disbursements, and as much as 143 percent and 172 percent of the amount paid in to the general fund in the form of the 2 percent sales tax. The allocation totals indicate that other funds from the commingled revenues of the general fund were added in these years to the education allocation, for return to the public school system.

The allocations to the elementary and secondary school system derive from a formula which initially guarantees an average basic dollar support to each student in the system, adjusted by the amount of funds available from the 1.5 percent local school support tax, to be balanced by state aid in the form of a Distributive School Fund. This calculation is shown on Table A-3 for two recent fiscal years. The amounts of state aid responsibility shown on Table A-3, after local responsibility, are \$157 million and \$183 million, or equivalent to 115 percent and 141 percent of the 2 percent state sales tax paid in to the general fund. In



Mt. Hope Molybdenum Project

Table A-1 Relationship of 2 Percent State Sales Tax to State  
General Fund Total Revenues (\$000)

	<u>Actual</u> <u>1981-82</u>	<u>Estimates</u> <u>1982-83</u>
<u>GENERAL FUND REVENUES:</u>		
1. <u>Taxes</u>		
Sales and Use <sup>1/</sup>	136,574	130,311
Gaming - State	155,868	161,850
Gaming - County	15	0
Liquor	9,106	8,580
Insurance	14,869	15,900
Casino Entertainment	20,023	16,800
Real Estate Transfer	0	0
Laetril, Gerovital Mfg.	115	115
Property	<u>14</u>	<u>0</u>
Subtotal	<u>336,584</u>	<u>333,556</u>
2. <u>Licenses</u>		
Subtotal	8,343	6,492
3. <u>Fees, Fines</u>		
Subtotal	995	1,046
4. <u>Service Charges</u>	434	430
5. <u>Interest, etc.</u>	19,600	9,727
6. <u>Other</u>	<u>1,510</u>	<u>1,109</u>
TOTAL	<u>367,466</u>	<u>352,360</u>

<sup>1/</sup> Sales and Use Tax as % Total General Fund Revenues: 37.2% (1981-82)  
and 37.0% (1982-83).

Source: The Executive Budget, FY 1983-84 and 1984-85 Volume 1, State of  
Nevada



Mt. Hope Molybdenum Project

Table A-2 Relationship of 2 Percent State Sales Tax to State  
Authorizations Out of General Fund (\$000)

	<u>1981-82</u> <u>Approved</u>	<u>1982-83</u> <u>Approved</u>
<u>SUMMARY APPROPRIATIONS AND AUTHORIZATIONS:</u>		
General Government	21,482	22,453
Education <sup>1/</sup>	195,555	224,450
Human Resources	89,011	97,142
Public Safety	28,227	33,456
Regulatory	13,658	13,566
Conservation, Agriculture, Energy	9,531	9,424
Highway, Department of Motor Vehicles	1,847	1,780
Miscellaneous	<u>15,728</u>	<u>20,381</u>
 TOTAL GENERAL FUND	 <u>376,039</u>	 <u>422,652</u>
 Total Other Funds	 500,586	 513,033
 GRAND TOTAL	 <u>876,625</u>	 <u>935,685</u>

<sup>1/</sup> Education as % Total Disbursements Out of General Fund: 52.0% (1981-82) and 53.1% (1982-83).

Education Disbursements as % Sales Tax Revenue: 143.2% (1981-82) and 172.2% (1982-83).

Note that Education includes University and Other Facilities additional to Dept. of Education (primary, secondary) on this table.

Source: Legislative Appropriations Report, 61st and 62nd Nevada Legislature, FY 1981-82, 1982-83 and 1983-84, 1984-85, Fiscal Analysis Division, Legislative Counsel Bureau. Sept. 1, 1981; Aug. 22, 1983.



Mt. Hope Molybdenum Project

Table A-3 State Calculation of Distributive School Fund Resources  
(Total School District Support Levels) Department of Education

	<u>1981-82</u>	<u>1982-83</u>	<u>1982-83</u> Revised
Adjusted Enrollment	148,103	150,545	146,838
(X) Avg. Basic Support	1,629	1,818	1,786
Total Basic Support (\$000)	241,289	273,497	262,673
Special Educ. Units (\$000)	15,697	16,672	16,672
Adult Diplomas (\$000)	1,000	1,000	1,582
Fed. Impact Aid Replacement	<u>3,327</u>	<u>4,327</u>	<u>1,612</u>
TOTAL NEED (\$000)	<u>261,313</u>	<u>295,496</u>	<u>282,195</u>
Local Responsibility (\$000) <u>1/</u>	(103,898)	(112,000)	(95,314)
State Responsibility (\$000)	<u>157,415</u>	<u>183,496</u>	<u>186,881</u>
Resources Outside of Guaranteed Support: (\$000)			
Ad Valorem Taxes	44,000	50,581	(not
Motor Vehicle	8,635	9,493	specified)
PL 81-874 (Impact Aid)	1,000	-	
Other	6,384	6,735	
Transfers	<u>10,341</u>	<u>10,341</u>	
TOTAL OUTSIDE REVENUES	<u>70,360</u>	<u>77,150</u>	<u>35,808</u> <u>2/</u>
TOTAL REVENUES	<u>331,673</u> <u>3/</u>	<u>372,646</u> <u>3/</u>	<u>318,003</u> <u>3/</u>
Total Per Enrollee (\$)	2,239	2,475	--

1/ Local School Support Tax (1.5%)

2/ Shown as a reduction to state responsibility in this year.

3/ Sum of TOTAL NEED and TOTAL OUTSIDE REVENUES. State Support out of General Fund (State Responsibility) is following % of State Sales Tax Revenues: 115.3% (1981-82) and 140.8% (1982-83).

Source: Legislative Appropriations Report, 61st and 62nd Nevada Legislature, FY 1981-83, 1983-85, Fiscal Analysis Division, Legislative Counsel Bureau, Sept. 1, 1981, Aug. 22, 1983.



these calculations, financial resource- revenue items: es outside the general fund are recorded: ad valorem taxes, motor vehicle taxes, etc., apparently as supplemental funds which may be drawn upon failing sufficient funds from "guaranteed support" from the State General Funds.

federal slot tax rebates;  
federal mineral and lease taxes;  
out-of-state local school support taxes;  
interest earnings of permanent school fund.

It is noted that, while taxes paid in to the state, such as vehicle, cigarette, liquor, gasoline, gaming, etc., return to the local jurisdictions in support of towns, counties and school districts, these taxes are specific levies not associated with the State Sales Tax, or the 2 percent component of that tax. Such specific levies are shown in the budget analysis of the Eureka and Elko jurisdictions as revenues to local governments deriving from the state. These tax revenues are only partly forecasted in the EIS fiscal impact analysis, as they are derived from spending by the new project-related populations, specifically gasoline, cigarette and liquor taxes.

These funds are commingled with the support to education given by the State General Fund (and the 2 percent state sales tax), such that the total revenue returned to local school districts in the form of the Distributive School Fund, or as specific allocations to school lunch, vocational education, etc., is a composite of various state and federal revenues, in addition to the State General Fund revenues and the inferred percentage relationship of the 2 percent state sales tax.

Final allocations to the elementary and secondary school system (kindergarten through grade 12) out of the State General Fund are of two kinds: the Distributive School Fund and miscellaneous specific allocations to the handicapped, for vocational education, school lunch programs, etc. These separate authorizations are shown on Table A-4. The Distributive School Fund alone in FY 1982 and 1983 amounts to \$124 million and \$152 million, respectively, or 91 percent and 117 percent of the 2 percent state sales tax revenues in the general fund. This appears to be the amount in each year finally settled upon as final for these programs. It is seen that in addition to the general fund revenues absorbed in the school support package, Table A-4 lists the availability of federal funds and other funds, which include an assortment of unrelated

As stated in Chapter 4.0 of the EIS and Section 3.4.4 of this Technical Report, the forecast of revenues to local jurisdictions contained in the fiscal impact analysis does not include this redistribution of the 2 percent sales tax, or the Distributive School Fund, or specific aids to education described above. The amounts paid in to the State General Fund in the form of the 2 percent sales tax, by Eureka and Elko Counties in Fiscal Year 1981-82, are reported to be: \$124,141 and \$2,780,960 respectively, for which they received, in return, in the School Distributive Fund, \$525,841 (Eureka, 1982/3) and \$5,395,979 (Elko, 1981/2). This amounts to a repayment of 4.2 times for Eureka and 1.9 times for Elko, in Distributive School Funds only.



Mt. Hope Molybdenum Project

Table A-4 State Allocations to Department of Education Out of General Fund  
By Type of Authorized Expenditure (\$000)

	<u>1981-82</u>	<u>1982-83</u>
<u>GENERAL FUND ALLOCATIONS</u>		
1. Miscellaneous:		
Education Administration	793	825
Care of Deaf and Blind	527	584
Professional Standards Committee	8	8
Vocational Education	324	328
Adult Basic Education	15	15
School Lunch	<u>360</u>	<u>360</u>
Sub-Total General Fund	<u>2,027</u>	<u>2,120</u>
2. Distributive School Fund: <u>1/</u>		
Out of General Fund	124,412 <u>2/</u>	152,573 <u>2/</u>
Federal Funds <u>3/</u>	24,892	10,500
Other Funds <u>3/</u>	<u>8,811</u>	<u>27,237</u>
Sub-Total D. S. Fund	<u>157,415</u>	<u>190,310</u>
3. Total Education Allocation:		
Total General Fund	126,440	154,693
Total Federal	43,295	30,830
Total Other	<u>10,356</u>	<u>30,852</u>
GRAND TOTAL ALL FUNDS	<u>180,091</u>	<u>216,375</u>

1/ Apportionments by formula, based on guaranteed dollars per pupil, taking account of local school support tax contributions in each school district, and state-imposed limits on local taxing authorities.

2/ Equal to 91% and 117%, respectively, of 2% State Sales Tax Component of State General Fund. Earmarked items for education under 1. Miscellaneous may be not by formula and specific as to place. \$1 million each for construction and vocational equipment is included in D. S. Fund.

3/ Includes Federal Slot Tax Rebates, Federal Mining Land Lease Tax, Out-of-State Local School Support Tax, and Interest Earnings on Permanent School Fund.

Source: Legislative Appropriations Report, 61st and 62nd Nevada Legislature.



APPENDIX 9-B



APPENDIX 9-B  
INFORMATION PERTINENT TO POWER LINE AND STATE ROUTE 278 ACTIVITY

1.0 Introduction

Initiation of the Mt. Hope project has included planning participation by both Mt. Wheeler Power, Inc. (electric power requirements) and the Nevada Department of Transportation (State Route 278 relocation). This Appendix presents pertinent data presented by both groups during the Mt. Hope EIS period. Both Mt. Wheeler Power, Inc. and the Nevada Department of Transportation, would individually apply for right-of-way granting, although the EIS serves to address environmental considerations.

In 1983, Mt. Wheeler Power, Inc. (MWP) provided an Environmental Impact Report (EIR) to allow EIS preparers access to information necessary to evaluate impact extent and to formulate mitigation planning if necessary. Section 2.0 of this Appendix abstracts the MWP EIR and includes notes, as necessary, concerning mitigative changes incorporated into the MWP plan as a result of EIS preparers review.

The Nevada Department of Transportation (NDOT) directly responded to an EXXON request for plans relative to realignment of State Route 278. In response, the NDOT presented a topographic map depicting realignment routing, discussed plans of cultural and surface water (McBrides Spring) avoidance, and provided details of construction workforce personnel, equipment and scheduling. Section 3.0 of this Appendix is limited to a duplicate copy of a detail letter received from the NDOT. The additional data provided by the NDOT has been directly incorporated into Chapters 2, 3 and 4 of the EIS.

2.0 Mt. Wheeler Power EIR Information

The transmission system proposed for the Exxon Mt. Hope Project is a 230 kV a-c system designed to deliver 50 MW from the Mt. Wheeler Power, Inc. (MWP) 230 kV system to the project site.

The power requirements for the project are of such magnitude (50 MW), it is assumed that reliability of electric service will require that the project have alternate sources of power to the EMC site. A new 230 kV power line will be constructed to the MWP Gonder Substation near Ely, Nevada from MWP Utah resources by 1985 or early 1986.

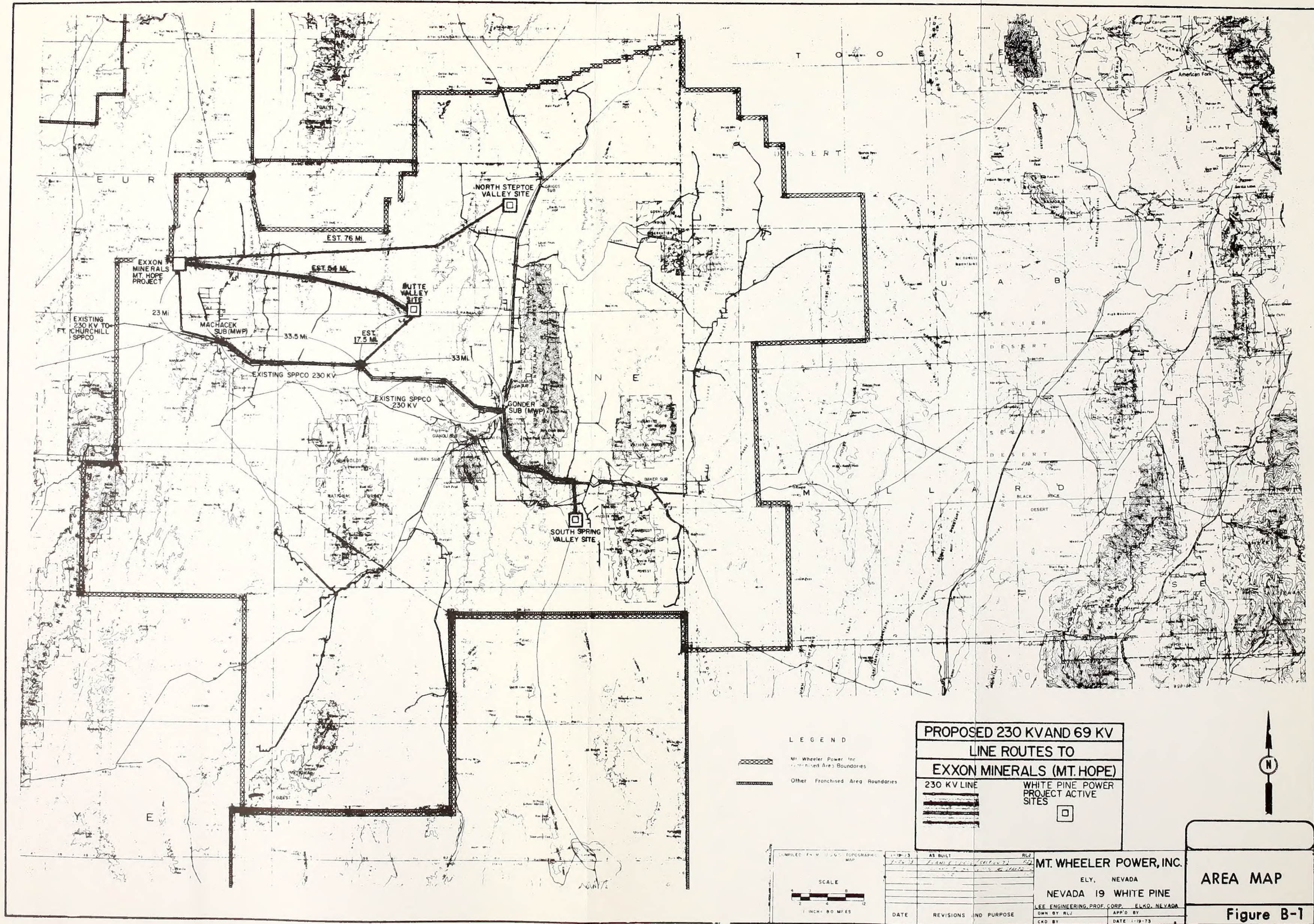
In addition, MWP will have additional resources by 1989 from its participation in the White Pine Power Project (WPPP) 1500 MW Plant in White Pine County, Nevada. Construction of this generating plant is scheduled to begin in July, 1984. Three (3) prime sites remain under consideration at the present time and selection for the final location is to be made during June, 1983, providing the selection date remains on schedule (MWP EIR, 1983).

Since the MWP report was being prepared during January, 1983, MWP developed preliminary plans to provide the power requirements of the project from any one of the three (3) White Pine Power sites still under consideration.

2.1 Location

Figure No. B-1 shows the MWP system within its certificated service area. The three (3) prime sites for the WPPP are also shown as well as the proposed routing of the various





LEGEND

- Mt. Wheeler Power, Inc. Franchised Area Boundaries
- Other Franchised Area Boundaries

**PROPOSED 230 KV AND 69 KV  
LINE ROUTES TO  
EXXON MINERALS (MT. HOPE)**

230 KV LINE

WHITE PINE POWER  
PROJECT ACTIVE  
SITES

SCALE

1 INCH = 60 MILES

DATE	REVISIONS	AND PURPOSE
1-19-73	AS BUILT	RLJ
1-24-73	PLANNED	RLJ
1-24-73	PLANNED	RLJ
1-24-73	PLANNED	RLJ
1-24-73	PLANNED	RLJ
1-24-73	PLANNED	RLJ
1-24-73	PLANNED	RLJ
1-24-73	PLANNED	RLJ
1-24-73	PLANNED	RLJ
1-24-73	PLANNED	RLJ

**MT. WHEELER POWER, INC.**  
ELY, NEVADA  
NEVADA 19 WHITE PINE  
LEE ENGINEERING, PROF. CORP. ELKO, NEVADA  
OWN BY RLJ  
APP'D BY  
CRD BY  
DATE 1-19-73

**AREA MAP**  
**Figure B-1**



power line alternatives. (Technical Note: Only that portion of the power line from Machacek substation to the Mt. Hope project site has been evaluated in the EIS. In accordance with the NEPA concept of tiering, the analysis of other-line development by Mt. Wheeler Power has been conducted in other EIS work and is scheduled to occur regardless of the Mt. Hope project development. Additionally, the the EXXON Mt. Hope project plans only incorporate power line access from the Machacek substation as opposed to the various alternatives, e.g., direct access from WPPP, discussed in the MWP information provided below).

- a. Assume SOUTH SPRING VALLEY Site selected for WPPP - A 230 kV line would be constructed by the WPPP to the MWP Gonder Substation. From Gonder Substation to the Machacek Substation, a 66.5 Mile 230 kV line would be constructed parallel to the Sierra Pacific Power Company (SPPCO) 230 kV line. From the Machacek Substation, a 23 Mile 230 kV line would be constructed to the Mt. Hope site.
- b. Assume NORTH STEPTOE VALLEY Site selected for WPPP - a 76 mile, 230 kV line would be constructed direct to the EMC Plant Site as well as a 23 mile, 230 kV Line from the Machacek Substation to the Mt. Hope site.
- c. Assume BUTTE VALLEY Site selected for WPPP - a 54 mile, 230 kV line would be constructed direct to the EMC Plant Site as well as a 23 mile, 230 kV line from the Machacek Substation to the Mt. Hope site.
- d. An alternate to (c) above would consist of a 17.5 Mile, 230 kV line constructed southwest to intercept the 230 kV corridor of the SPPCo 230 kV line, then 33.5 miles of 230 kV to the Machacek Substation, then 23 miles of 230

kV line from the Machacek Substation to the Mt. Hope site.

- e. The right-of-way requirements for 230 kV power line would vary from 110 to 125 feet in width and would require from 13.3 to 15.2 acres per mile of line.

## 2.2 Construction Activities

### 2.2.1 Duration

The duration of the construction of the project is estimated to be 50 weeks if the North Steptoe Valley Site is selected and 38 weeks if the Butte Valley site is selected. The construction period for the other alternative routings lie between the above maximum and minimum periods. Time to construct from the Machacek substation to the Mt. Hope site is estimated to equal 11.5 weeks.

Area to be Disturbed. Some amount of land clearing would be necessary to permit movement of construction equipment. Land clearing would be restricted to the minimum necessary for the safe construction and operation of the line and would consist of crushing and uprooting brush. Clearing of desert vegetation would be restricted to the minimum required for placement of poles, anchors and wire pulling sites.

Pole site clearing would normally require a circular space, approximately on a 5 foot (5') radius to protect the wood poles from wild fires. This clearing, normally an ongoing operation and maintenance activity to protect the pole line from fire, has been eliminated from planning in order to assure minimum environmental disturbance.

Removal of trees would be limited to those that constitute a hazard to the power line and whose tops are within 20 feet of the conductor and



which cannot be topped. The clearing of trees would be done wherever possible after conductor installation to minimize tree trimming or removal to provide a feathered right-of-way.

### 2.2.3 Construction Labor Force

The power line construction labor force would be composed of the major skills or categories of lineman, groundmen, operating engineers, electrical workers, non-manuals and 'others'. Non-manuals would predominantly be field engineers, surveyors and inspectors. 'Others' would include office personnel and support personnel such as superintendents, foremen, mechanics, fuel and lubemen.

It is estimated that the total labor force necessary to accomplish the proposed construction would number between 45 and 60 people working one eight to ten hour shift a day, five days a week.

### 2.2.4 Construction Equipment Requirements

Typical 230 kV power line construction equipment would be approximately as follows:

Cars	Pole Trailer
Pickups 1/2 Ton	Wire Trailer
Office Trailer	Reel Stands
Dozer	Fork Lift
Road Grader	Conductor/Static
4x4 Pickups	Line
Truck/Tractor	Tensioners
with Auger	Traveler Truck
Air Compressor	with 6-Ton Boom
Backhoe	Conductor
6x6 Flat Bed	Travelers
Trucks	6x6 with Aerial
Fuel/Lube Trucks	Platform
25-Ton Crane	4x4 6-Man Carry-
	Alls

### 2.2.5 Access Roads

Existing public and private roads would be used where available. Some roads may require upgrading to accommodate construction traffic. All existing roads used for construction would be left in the same or better condition than originally found.

New access roads would be constructed along the power line right-of-way where suitable existing roads are not available. Access roads would consist of a main road running the length of the power line right-of-way with stub roads providing access to each structure location. At times it would be necessary to locate access roads outside the right-of-way limits due to geological, ecological or topographical consideration. In these cases, all applicable permits would be obtained and all regulations adhered to.

All access roads would be constructed in accordance with the specifications and regulations of the entity having jurisdiction of the lands crossed.

All fences crossed by the power line would be provided with a gate as required by the landholder, to provide access for the construction force as well as operation/maintenance personnel after construction was completed.

## 2.3 Maintenance Activities

### 2.3.1 Duration

Maintenance would include the operations needed to keep the lines and associated facilities in service. The lines and right-of-way would be inspected during planned periodic ground patrols, approximately two times per year. Emergency patrols by air as well as emergency maintenance on the ground would be performed in



the event of any line failure.

### 2.3.2 Area to be Maintained Clear of Vegetation

In some cases it may be necessary to clear taller vegetation to aid in fire prevention.

### 2.3.3 Maintenance Personnel

Routine patrols would consist of a lineman and groundman making a structure inspection of the pole line. In emergencies as many as fifteen (15) to twenty (20) personnel would be utilized to complete repairs as rapidly as possible.

### 2.3.4 Maintenance Equipment

Vehicles for maintenance would primarily consist of four-wheel drive pickup trucks and rubber-tired winch trucks. Tracked vehicles would be needed only during times of emergency repair.

### 2.3.5 Access Roads

Access roads constructed during the construction of the power line would be utilized for all maintenance and emergency repair of the line.

## 2.4 Transmission Structures

### 2.4.1 230 kV Structure Drawings

Figures B-2, B-3 and B-4 represent standard REA structure drawings for 230 kV Construction. Dimension and conductor spacing is shown for each of these drawings.

Figure B-2 - Tangent Structure  
(TH-230)

Figure B-3 - Medium Angle Structure  
(TH-233)

Figure B-4 - Deadend Structure  
(TH-235)

## 2.4.2 Structure Hazards

Hazards to people, due to the structures, would be the possibility of collisions with the pole(s) and guy wires by off-road vehicles and aircraft collisions with the structure(s) and conductor(s) during inclement weather. The guy wires would have an 8 foot yellow marker attached from the ground line up the guy strand.

The structure would not be a hazard to livestock or wildlife except for raptors who use the structure as a predatory perch and will be an easy target for the "sportsmen".

## 2.5 Mitigating Measures

### 2.5.1 General

Power lines would be located parallel to existing power line rights-of-way when practicable. Power lines would be located, wherever possible, to use the natural terrain as background on screening.

Existing access roads would be used where practicable. Soil excavated during construction would be evenly distributed over cleared areas. Watering of access road surfaces would be done if necessary to minimize fugitive dust emissions.

## 2.6 Environmental Criteria

The policy and practice of Mt. Wheeler Power, Inc. is to protect the environment of the service area to the fullest extent practicable within the constraints of technological and economic feasibility while fulfilling its primary responsibility of supplying low cost electric service to its consumers.

In this regard, the design, construction, cleanup, restoration and maintenance of the proposed project



# NOTES:

- \* 1. As required see Drg. TM-1.
2. Cotter keys in insulator strings and clamps shall be oriented in same direction and shall face pole.
3. Any field drilled pole holes shall be pressure treated.
4. Structures shall have suitable pole foundation to resist uplift.
- \*\* 5. Dimension "A" shall be as shown on Drg. TM-204
6. Double crossarms shall be shipped complete with factory assembled hardware.
7. For other requirements of assemblies refer to Specification T-8.

\*\*\* CROSSARM TYPE B1

## LIST OF MATERIALS

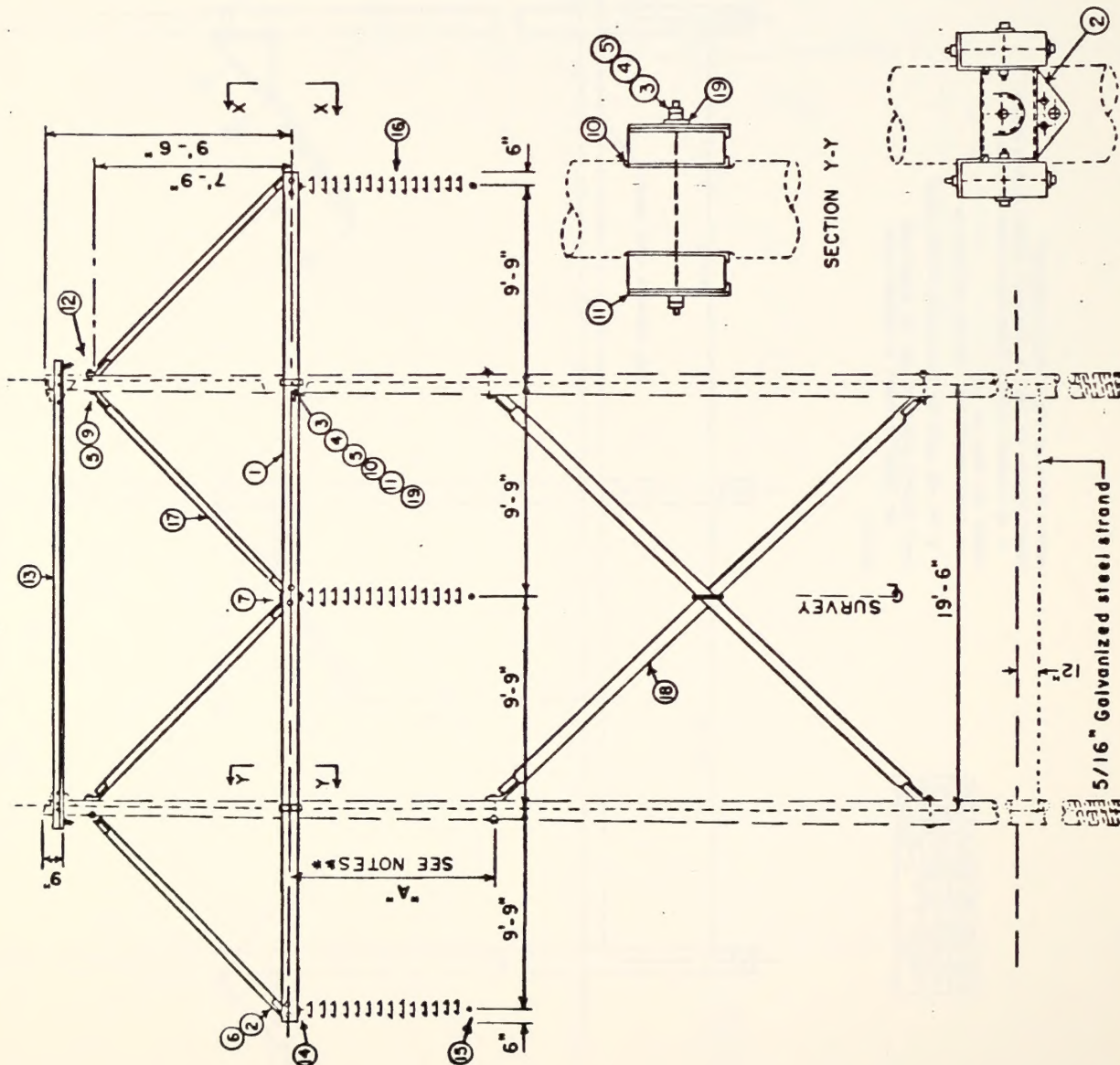
DRG. REF.	REQ.	DESCRIPTION	QTY
1	2	Crossarm 3 5/8" X 9 3/8" 40'-0" long ***	2
2	3	Spacer Filling Ass'y Separation as req'd	3
3	2	Threaded rod 7/8" X req'd length	2
4	4	Nut for 7/8" bolt	4
5	6	Locknut for 7/8" bolt M.F. type	6
6	2	Bent bolt 7/8" X 5 1/2"	2
7	1	Bent stud 7/8" X 8" with th'd washer 8 nut	1
9	2	Machine bolt 7/8" X req'd length	2
10	4	Gain plate 3" X 9 1/2" X 1/4"	4
11	4	Ribbed tie plate 3" X 9 1/2" X 1/4"	4
12	2	Single curved grid plate 4" X 4" Min 15/16 hole	2
13	1	OHGW support assembly TM 109B	1
14	3	Suspension hook	3
15	3	Suspension clamp and connecting piece	3
16	*	Insulator suspension 5 3/4" X 10" X 15,000 lb. M.B.E.	1
17	4	V-braces 3 3/8" X 5 3/8" X req'd length	4
18	1	X-brace Assembly TM-110A	1
19	2	Spring washer 15/16" hole	2

TRANSMISSION LINE TANGENT STRUCTURE  
230 KV H-FRAME SUSPENSION - TWO POLE

May 1963

FIGURE B - 2

TH-230

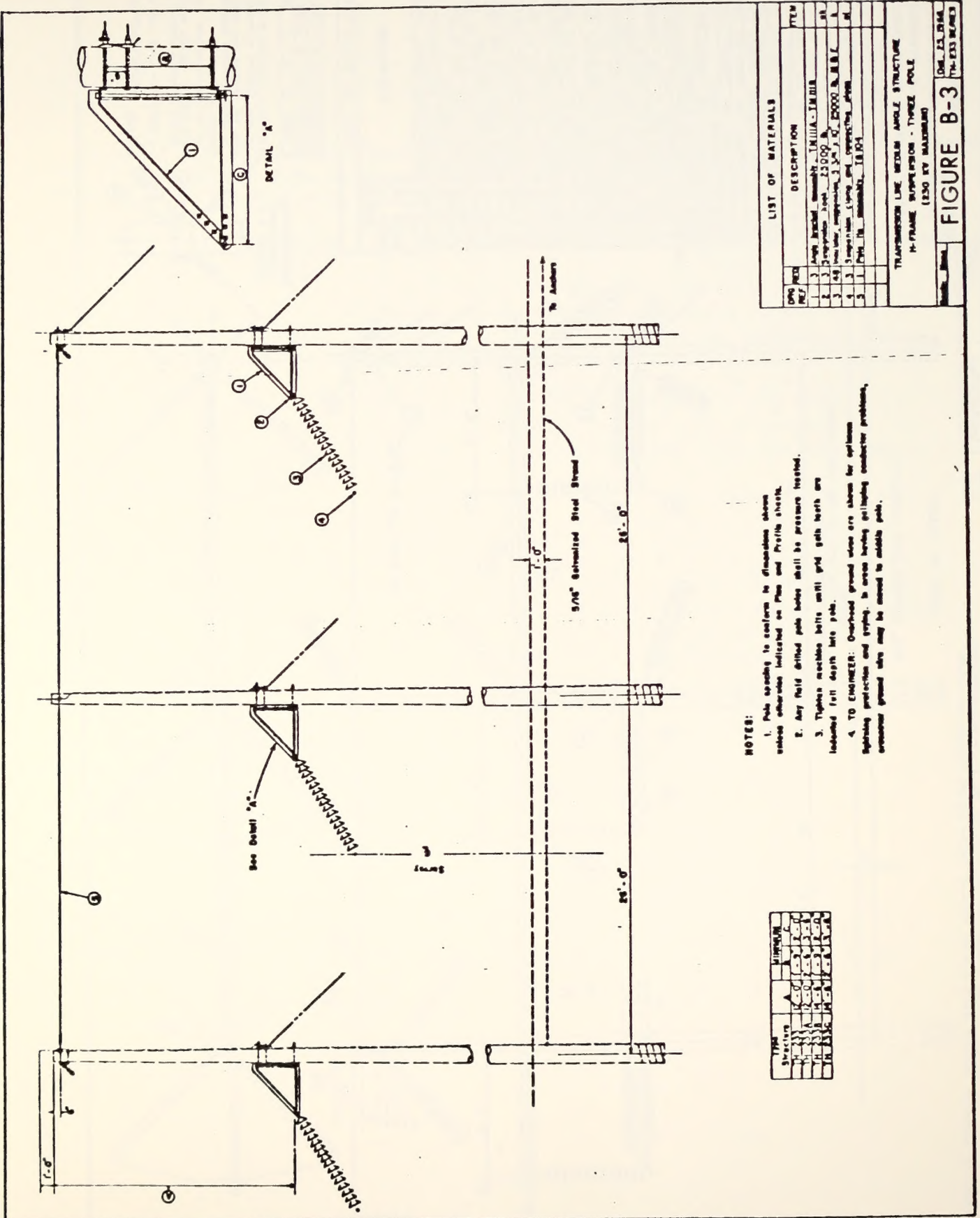


SECTION X-X

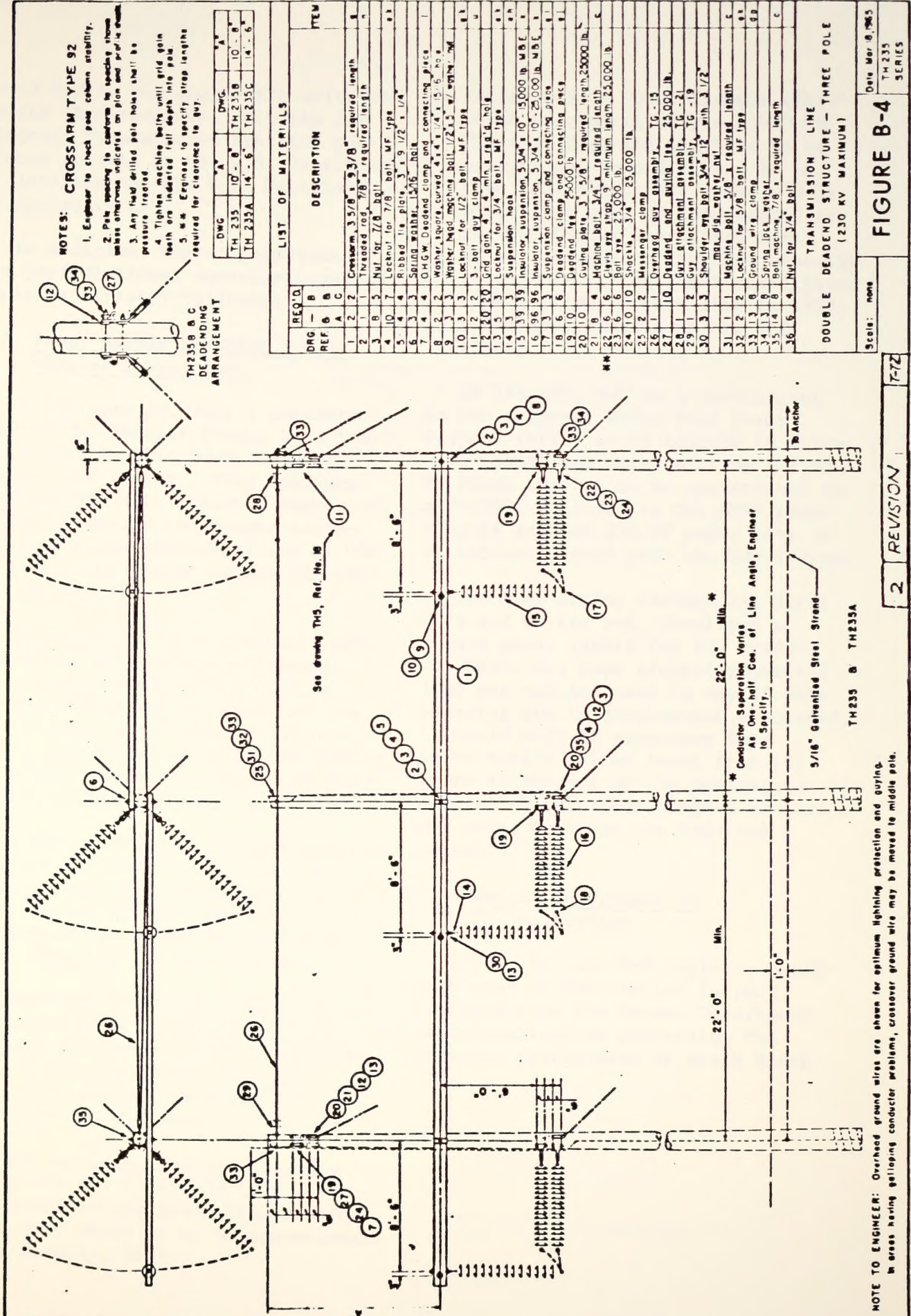
REVISED

17-72









REQ'D		ITEM	
DRG	REF	DESCRIPTION	ITEM
B	A		
1	2	Crossarm, 3 5/8" x 9 3/8" required length	1
2	1	Threaded rod, 7/8" x required length	2
3	8	Nut for 7/8" bolt	3
4	10	Locknut for 7/8" bolt, MF type	4
5	4	Ribbed tie plate, 3" x 9 1/2" x 1/4"	5
6	3	Spring washer, 1 1/2" hole	6
7	4	OHGW Deadend clamp and connecting plate	7
8	2	Master square, curved, 4 x 4 x 1/4 x 15 1/6" hole	8
9	3	Master square, curved, 4 x 4 x 1/4 x 15 1/6" hole	9
10	3	Master square, curved, 4 x 4 x 1/4 x 15 1/6" hole	10
11	2	Locknut for 1/2" bolt, MF type	11
12	20	20 - 2" 3-bolt guy clamp	12
13	20	20 - 2" 3-bolt guy clamp	13
14	3	Locknut for 3/4" bolt, MF type	14
15	39	Suspension hook	15
16	96	Insulator, suspension, 3 3/4" x 10" - 15,000 lb MBE	16
17	3	Insulator, suspension, 3 3/4" x 10" - 25,000 lb MBE	17
18	6	Suspension clamp and connecting plate	18
19	10	Deadend clamp and connecting plate	19
20	10	Deadend clamp and connecting plate	20
21	8	Guying plate, 3" x 5/8" x required length, 25,000 lb	21
22	6	Machine bolt, 3/4" x required length	22
23	6	Clavis eye thop, 9" minimum length, 25,000 lb	23
24	10	Bolt eye, 25,000 lb	24
25	2	Shackle, 3/4" - 25,000 lb	25
26	1	Overhead guy assembly, 16 - 15	26
27	10	Deadend and guying, 16 - 15	27
28	1	Guy attachment assembly, 16 - 21	28
29	1	Guy attachment assembly, 16 - 19	29
30	3	Shoulder eye bolt, 3/4" x 12" with 3 1/2" max. dia. washer, nut	30
31	1	Machine bolt, 3/8" x required length	31
32	2	Locknut for 5/8" bolt, MF type	32
33	13	Ground wire clamp	33
34	13	Spring lock washer	34
35	14	Bolt machine, 7/8" x required length	35
36	5	Nut for 3/4" bolt	36

REVISION		FIGURE B-4	
NO.	DESCRIPTION	DATE	BY
1			
2			



would follow the applicable criteria in the "Environmental Criteria for Electric Transmission Systems" published jointly by the U.S. Department of Interior and the U.S. Department of Agriculture.

In addition, the stipulations of the jurisdictional agencies involved would be strictly followed.

## 2.7 Power Supply Planning - Mt. Wheeler Power, Inc.

On February 24, 1971 a contract between Mt. Wheeler Power, Inc. (MWP) and Sierra Pacific Power Company (SPPCO) was signed. This contract provided MWP with capacity rights of 40,000 kW during the summer season (April through September) and 22,000 kW during the winter season (October through March).

Subsequent to this contract, MWP joined the Intermountain Consumer Power Association (ICPA) in Utah whereby ICPA acted as agent for the MWP Colorado River Storage Project (CRSP) allocation of 22,000 kW during the summer season and 12,800 kW during the winter season.

In the mid-70's, it became apparent that all the members of ICPA would require additional power supplies. The planning by ICPA has resulted in MWP participating in the following power supplies for its system.

- a. Formation of Desert Generation and Transmission Cooperative (DG&T) which purchased 100 MW in Unit No. 2 of the Utah Power and Light Company Hunter steam-electric generating station.
- b. DG&T has under construction its Bonanza No. 1, 400 MW (360 Net) steam-electric generating station in Utah which is to be operational by January, 1985.

- c. Intermountain Power Project (IPP) which is constructing a 1,500 MW Plant in Utah and which is to be operational in mid-1986. It is from this plant that a new 230 kV power line will be constructed to the MWP Gonder Substation North of Ely, Nevada to increase capacity to the MWP System. MWP anticipated construction of this line in 1985, prior to operation of the IPP Plant.

On its own, MWP is a participant in the proposed White Pine Power Project (WPPP) to be located in White Pine County and which will be a 1,500 MW Plant that is to be operational in mid-1989. Included in the WPPP planning is another 230 kV power line to be interconnected with the MWP System.

MWP has, acting through its agent ICPA and on its own, developed a future power supply for its system. The Exxon Mt. Hope project potential load was not included in any of this planning and if development proceeded, it would only be necessary that Exxon notify MWP at least four (4) years in advance of the operational date of the Mt. Hope project so that MWP could schedule the required capacity.

## 3.0 Nevada Department of Transportation

Figure B-5 and B-6 depict a duplicate copy of information in part, received from the Nevada Department of Transportation concerning the proposed realignment of State Route 278.





STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION

1203 SOUTH STEWART STREET  
CARSON CITY, NEVADA 89712

TRANSPORTATION BOARD  
RICHARD H. BRYAN, Governor, Chairman  
BRIAN McKay, Attorney General  
DARRELL H. DAINES, State Controller

June 8, 1983

A. E. STONE  
Director

IN REPLY REFER TO

Ms. Kit Krickenberger  
Exxon Minerals Company  
P. O. Box 4508  
Houston, TX 77210

Exxon - Mt. Hope  
SR 278

L Dear Ms. Krickenberger:

The following information is submitted in accordance with our cooperative Agreement No. R150-83-010. Attached is a map which depicts the general alignment based on previously submitted contours. Also attached is a typical section which shows the anticipated widths, slope configurations and a typical drainage structure crossing.

In general, the 6.0 mile project is estimated to cost \$3,400,000 with an estimated start to finish time of one construction season.

Overall cut and fill volumes, paving descriptions, depths and the number and type of drainage structures will not be made available until more detailed design work is accomplished.

A summary of other pertinent details follows:

Area Disturbed During Construction

84 Ft.± width .....	20,592 feet
105 Ft.± width .....	9,504 feet
126 Ft.± width .....	1,584 feet

Area Permanently Disturbed

80 Ft.± width .....	20,592 feet
100 Ft.± width .....	9,504 feet
120 Ft.± width .....	1,584 feet

Equipment Typically on Site During Construction

TYPE	H.P.	POWERED	NUMBER
Dozers D-8	300	Diesel	2
Scrapers 631	450	"	5
Backhoes 1 Cu. Yd.	55	"	1
Loaders 966	200	"	2
Rollers (Pneum.)	100	"	2
Rollers (Steel)	87	"	2
Trucks (Hauling)	200	"	10
Trucks (Water)	150	"	2
Motor Grader 135	180	"	2
Crushing Plant	300	"	1
Hot Plant	100	"	1
Paver	122	"	1

It is estimated a work crew of 30-50 persons will be required working an 8-hour day, 40 hour week. The work crew will likely consist of operating engineers, teamsters laborers and fence erectors.

As an additional note, our Agreement No. R150-83-010 states in the preambles the project extends from approximate mileposts EU 51.44 to EU 56.55. Those are apparently in error with the actual mileposts being EU 15.00± to EU 22.00±. I apologize for any inconvenience this may have caused you.

If you have any questions please contact Bill Bowman, Project Designer at (702) 885-5609 or myself.

Sincerely,

*Michael W. McFall*

Michael W. McFall  
Assistant Chief Road Design Engineer

MWM:kl

Attach.

cc: Jim Cress





FIGURE B-6

HARD SURFACE  
Heavy duty  
Medium duty  
Loose surface

and published by the Geological Survey  
and USCGS

erial photographs by multiplex methods,  
surveys 1949  
taken 1946

1927 North American datum  
on Nevada coordinate system

BLM Library  
D-553A, Building 50  
Denver Federal Center  
P. O. Box 25047  
Denver, CO 80225-0047

Form 1279-3  
(June 1984)

BORROWER

TD 195 . M5 M68  
Socioeconomics  
molybdenum pr

DATE  
LOANED

BORROWER

USDI - BLM

BLM Library  
D-553A, Building 50  
Denver Federal Center  
P. O. Box 25047  
Denver, CO 80225-0047



